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Original Articles

CONSERVATIVE OPERATIONS ON BONE TUMORS,

BASED ON THE CLINICAL AND PATHOLOGIC STUDY OF THE RELATIVE DEGREE OF MALIGNANCY.*

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The object in the treatment of a bone sarcoma is to insure, if possible, a permanent cure. Amputation is a mutilating operation. The question naturally arises: Can some bone tumors be completely removed without amputation and with the same assurance of a permanent result?

From a personal study, now extending over a number of years, of cases treated in Dr. Halsted's surgical clinic of the Johns Hopkins Hospital, and those in my own practice, and of a number communicated to me through the courtesy of colleagues, and collated from the literature, I have found that, with rare exceptions, the permanently cured patients suffered from tumors of similar pathologic anatomy, and such cures were accomplished in properly selected cases by conservative operations just as well as by amputation. In the class of cases in which cures were not accomplished, the pathology of the tumor is very much alike and entirely different from that in the first group. In this latter group, in spite of amputation at the highest joint, patients succumb to internal metastasis.

I shall discuss, first, bone tumors for which the extent of the operation is governed by the local growth, and for which amputation is indicated only when the necessary local resection would leave a limb without function. When amputation is demanded by the local growth of the tumor the highest point need not be selected.

BONE CYSTS.

There are two varieties: The first, the dentigerous cyst, which is observed in the jaws. Undoubtedly it arises from an embryonic residue, mesoblastic or epiblastic, of the dental tissue. This cyst originates within the bony cavity of the upper or lower jaw, and in its growth expands the bone, producing a cystic tumor with a bone capsule. This is thin in places and may give rise to parchment or ping-pong-ball crepitation. The cyst can be recognized only at the exploratory incision. The soft parts are normal; the periosteum, as a rule, strips back easily; the thin shell of bone is not infiltrated. As this piece of bone is removed a thin connective-tissue capsule is seen composed of an outer layer of dense, white fibrous tissue which strips from the bone more readily than the periosteum; and an inner layer of reddish vascular tissue. The cyst usually contains only clear, viscid serum. In the majority of my cases I have found no epithelial lining; in two cases the cyst was lined with adamantine epithelium, and the fluid in these two cases resembled that of an atheromatous cyst of the neck. These cysts may be multilocular.

In order to accomplish a cure, it is simply necessary to remove the membranous lining. The amount of bone capsule to be excised should be governed by the extent of the deformity; resection of the jaw is never indicated.

The second variety of bone cysts occurs in the medullary cavity of the long pipe bones, rarely in the short and the flat bones. It differs from the dentigerous cysts in the absence of a connective tissue capsule. The fluid is usually hemorrhagic. Islands of cartilage may be found in the bone capsule. Clinically there is a uniform expansion of the shaft, usually near the joint end, of slow growth. Fracture may be the symptom of onset. Union may take place, but the swelling does not disappear. The *x*-ray shadow does not differ from that seen in any medullary tumor which produces in its growth bone absorption and retains a bony capsule. The benign nature of the lesion can only be ascertained with certainty at the exploratory incision. Curetting and drainage of the cyst will accomplish a cure.

THE ADAMANTINE EPITHELIOMA.

This can not be distinguished clinically from the dentigerous cyst when it arises within the bony cavity of the jaw, nor from the so-called epulis, when it begins beneath the mucous membrane of the alveolar border of the jaw. At the exploratory incision the adamantine epithelioma can be distinguished from the dentigerous cyst by the coarse, white granular tissue filling the single or multiple cavities. This tumor must be completely excised with its bony wall, but in the excision one can keep close to the tumor. I have never observed metastasis, and all patients under my observation have remained permanently cured. Further study may demonstrate that in the early stage this tumor may be curetted with the preservation of part of the bone capsule, or one may practice subperiosteal resection and thus limit the mutilation of the operation. When the adamantine epithelioma occurs as an epulis, local removal with excision of the alveolar border of the jaw only is necessary. As this is the accepted operation in all pathologic varieties of epulides, a differential diagnosis is not necessary.

MEDULLARY FIBROMA.

This rare condition may be looked on as a solid bone cyst, because there seems to be a definite relation between the two. Both may have the same origin; in one liquefaction predominates, in the other fibrous tissue—ostitis fibrosa. I have tissue from two cases. It is not a malignant tumor, and a conservative operation is sufficient.

* Read before the American Orthopedic Association, Washington, D. C., May 8, 1907.

GIANT-CELL SARCOMA.

This tumor usually originates in the medullary cavity of the long pipe bones, although periosteal growths have been recorded. It is the most common form of epulis which may be looked on as a periosteal growth from the alveolar border of the jaw. I have observed two cases, however, in which the tumor was a medullary growth in the lower jaw.

This tumor has a characteristic appearance in the fresh state. When first seen at the exploratory incision, it strikes one by its very hemorrhagic mottled coloring. The majority of areas are red, with here and there specks or smaller masses of a pinkish white. The tumor is friable and can be broken up into irregular masses. At first sight it resembles hemorrhagic granulation tissue, but it is firmer and less succulent.

When the giant-cell tumor occurs as a medullary growth it expands the bone like the cyst just described. It may be as slow of growth as the cyst. The *x*-ray shadow does not distinguish it positively from any other medullary tumor having a bone shell. This tumor has been permanently cured by simple curetting. Recurrences have followed curetting, but were permanently eradicated by a second operation of curetting, resection or amputation. In over one hundred cases of the pure tumor none has given metastasis. It seems justifiable at the first operation, therefore, to attempt the most conservative method, even with the risk of a local recurrence, which, if it does occur, apparently is not associated with any danger of metastasis.

One should not attempt curetting unless there is a thick shell of bone, so that the curette or chisel removes a zone of bone beyond the tumor. When the shell of bone is thin, subperiosteal resection should be performed; when the periosteum and surrounding muscles have become infiltrated, total resection is indicated. In one of my recorded cases in which a cure was effected and in which there was infiltrated muscle, the microscope demonstrated the giant-cell tumor within a few millimeters of the plane of resection.

For the periosteal giant-cell tumor local resection with chiseling of a zone of bone beneath is sufficient. To one not familiar with the fresh appearance of this giant-cell tumor a rapid frozen section will be of great value for diagnosis.

As this tumor is relatively frequent, and as in this country amputation has been the method of choice, a knowledge of its characteristic appearances should be acquired by surgeons who desire to cure bone tumors with the least mutilation compatible with absolute safety.

MYXOMA.

The pure myxoma is a very rare tumor. It may occur as a medullary growth or as a periosteal exostosis. In the former it is associated with the bone shell; in the latter with a partial bony wall. I have observed but one case—a patient of Dr. Halsted's. The myxomatous appearance of the tissue was sufficiently characteristic to allow a diagnosis. This tumor should be subjected to the same treatment just discussed for giant-cell sarcoma.

ENCHONDROMA AND MYXOCHONDROSARCOMA.

There is no difficulty in recognizing pure enchondroma; it is benign, and local resection is sufficient.

In myxochondrosarcoma the cartilage and myxomatous tumor usually occur together and most often with sarcomatous degeneration. I have been surprised, however, at the excellent results after complete removal. Metastasis is rare, but possible. Curetting should never be employed, but local resection is justifiable. This tumor is very common in the antrum of the upper jaw.

PERIOSTEAL OSTEOSARCOMA.

I am of the opinion that the term osteosarcoma should be given only to that bone tumor associated with new bone formation. As a matter of fact this is observed, to any extent, only in the periosteal tumor.

This sarcoma of bone, characterized by spicules of new bone formation radiating from the shaft between which tumor tissue is present, occurs most commonly on the lower jaw. In my experience none of the cases has given metastasis. Local resection should be the operation. The tumor has a distinct capsule and does not infiltrate the surrounding muscles; it must, however, be removed with the shaft of the bone which it surrounds.

At first sight it might seem difficult to differentiate in the *x*-ray picture the following periosteal lesions: ossifying periostitis, osteoma and exostosis, ossifying myositis and periosteal osteosarcoma. Lack of space prevents a detailed discussion here; but the *x*-ray shadows of these diseases are, as a rule, sufficiently characteristic at least to distinguish the benign from the malignant lesion, and the tissues exposed at the exploratory incision are of sufficient difference to confirm the impression gained from the *x*-ray.

PERIOSTEAL FIBROMA AND EXOSTOSIS BURSITIS.

I have observed periosteal fibroma only on the jaw. Local excision is sufficient, even when the tumor has become a fibro-spindle-cell fibrosarcoma.

Exostosis bursitis is a benign lesion which clinically may resemble a rapidly growing sarcoma. The congenital small exostosis springing from the outer table of the bone gives no symptoms. The first rapid swelling observed by the patient is due to the filling of the bursal sac with fluid. Clinically there is a rapidly growing, tense tumor apparently of periosteal origin. Unless *x*-rays are taken from numerous directions the exostosis may be missed. This lesion is recognized at once if an exploratory incision is made. In one of my cases the patient was sent to me for an inoperable sarcoma of the upper end of the femur over the trochanter, and I must confess, after a careful study of the case, that this diagnosis seemed feasible. The patient's consent to a hip-joint amputation was obtained. Fortunately, I followed my rule never to amputate without some positive assurance of the nature of the tumor, and for this reason I made an exploratory incision. There was a distinct sac with a hemorrhagic lining, bloody contents and, springing from the trochanter, an exostosis with a cartilage covering.

OSTEOPERIOSTEAL LIPOMA.

A lipoma springing from the periosteum and simulating a periosteal growth is possible. Its nature is, of course, recognized the moment the tumor is explored. The literature on this subject has recently been collected by Schwarz and Chevrier.[1]

The more malignant sarcomata of bone are rarely permanently cured in spite of the highest amputation performed in many instances a few weeks after the first symptom. Death is due to metastasis, usually to the lungs. The entire duration of life is seldom over two

1. Rev. de Chir., 1906, xxxiii, p. 469.

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years. I have never observed a permanently cured case. In the literature there are a few, and it is very suggestive that among this group of tumors more cures have been accomplished by local resection than amputation. It is true that naturally local resection was selected because of the smaller and more circumscribed character of the tumor. Even in this group, therefore, local resection is justifiable in the early stage of the neoplasm.

These more malignant sarcomata consist of various forms of the round and spindle cell tumor and the angioma sarcoma, chiefly the perithelial.

The medullary growth eats its way through the cortical bone and does not produce bone expansion. Pathologic fracture may be the symptom of onset. The periosteal tumor also rapidly infiltrates the cortical bone beneath. In both, the character of the tumor tissue is so different from the neoplasms previously discussed that there should be no difficulty in making a differential diagnosis. This diagnosis is suggestive by the evidence of bone destruction in the *x*-ray.

CONDITION OF URINE IN BONE TUMORS.

Before summing up, I wish to call attention to the importance of an examination of the urine in all cases of bone tumors. In the multiple myeloma of bone, Bence-Jones bodies are present. Clinically, this hopeless disease of medullary tissue may in a few instances present itself as a single bone lesion. In this stage, even *x*-ray studies of other bones may fail to show any other lesion. If the urine is not examined the surgeon would proceed to a radical operation on the apparent single bone lesion without any suspicion of its multiple nature. The medullary growth of the myeloma in its early stage expands bone and resembles the giant-cell sarcoma or bone cyst. Later, the bone capsule is destroyed. It is important to remember that in some instances the benign bone cyst may be a multiple lesion. The cases thus far recorded have been associated with osteomalacia. Multiple giant-cell tumors have been observed in a case of ostitis deformans by Rehn.

THE CONDUCT OF A PLAGUE CAMPAIGN.*

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In a brief paper intended merely to enumerate the eradicative measures in operation in San Francisco, I shall not touch on the economic importance of the problem to the city, state and nation. In this connection it should be mentioned that plague is considered by some epidemiologists as the most difficult of all diseases to eradicate; indeed, there are those who maintain that where the infection has once taken root, the disease never dies out entirely. The success which crowned the efforts of the health authorities of Oporto in 1899, Glasgow in 1901, Naples in 1903, and San Francisco in 1903 and 1904, renders this theory untenable. Let no one be discouraged by these prophecies of evil, but let him remember that whenever organized bodies, having the cooperation of the people, have taken the field the disease has been vanquished.

To be successful, the campaign of eradication must be based on a knowledge of the etiology, mode of transmission and the causes of the continuance of the disease. First of all, the campaign should be conducted by a trained corps of medical men having few local affiliations or prejudices, able to devote their entire time to the work, and backed by the strong arm of the government. No matter how earnest and conscientious the local authorities may be in the discharge of their duties, their plans of operation do not always meet with that acceptance and approbation which is accorded an outsider. Personal and political differences often arise to hamper the best efforts of an honest and capable board of health, and often render futile the plans which would have ensured a successful issue. Given a special plague department, heartily backed by the local authorities, and the people they represent, provide them with sufficient funds and power to act, and the stamping out of the disease is almost certain.

The duties of this department, briefly summarized are: The location and determination of plague cases, both human and rodent; the tracing of the source of infection in each case, and the destruction of the infecting agents. The destruction of rat habitations as far as possible; the abolition of the means of rat sustenance; and the protection of all places of human residence against the ingress of rodents.

To expand on these basic principles: First, the location and determination of plague cases both human and rodent. This entails a careful examination of all dead bodies, the examination of all sick persons, and the isolation and observation of all suspicious cases and contacts. For this purpose inspectors of the dead should be appointed, and no corpse removed or buried until it has been viewed by an inspector and a permit issued. Bodies of persons dying of plague should be cremated or buried in metal coffins with quick lime. The local practitioners should report all cases coming under their observation which in any way resemble plague. Whenever any doubt exists as to the diagnosis, skilled diagnosticians from the plague department should be called. In addition, whenever a person is found sick on the sanitary survey, the diagnosis should be determined by the officer in charge of the district, either by a visit to the attending physician or by consultation with him, should this be considered necessary.

The city should be divided into districts and a trained medical man placed in charge of each district. He should establish a centrally located and convenient headquarters, and should be given men and supplies sufficient for the conduct of the work. His first duty is to make a rapid sanitary recognizance of his district, employing for this purpose sanitary inspectors who report on the street and number of each house, the number of persons residing therein, the sanitary condition of the premises and the occurrence of sickness in the two months prior to the epidemic. Special attention should be given to stables, bakeries, markets and junkshops, it being borne in mind constantly that the prime object of the campaign is the destruction of the rat and his parasites. If domestic animals have died with any of the symptoms of plague, or if there is an unusual prevalence of suctorial insects, such as fleas or bed bugs, it should be noted, and the house treated with some insecticide. The reports of the sanitary survey should be filed in a suitable card index so that information as to the sanitary condition of all premises in the district is available at a moment's notice. In addition, a map showing the occurrence of human and rat plague should be kept so that the medical officer in charge of the district may

* Read before the San Francisco Academy of Medicine, Nov. 26, 1907.

know where to concentrate the efforts of himself and his men.

In plague times any patient with the symptoms of an acute infection of any kind, such as chill, headache, backache and rise of temperature, should be kept under observation until the diagnosis is clear and plague can be excluded. All cases of plague, or disease resembling it, should be isolated carefully in a rat-proof compound, and persons who have come in contact with such cases kept under observation for the full period of incubation. It is advisable, especially if the case is of the pneumonic type, to administer an immunizing dose (10 c.c.) of Yersin's serum to each person exposed to the infection. In uncomplicated bubonic cases recourse to this method is not considered necessary as the probability of infection from exposure to such cases is remote. Haffkine's prophylactic should not be administered to contacts on account of the negative phase which it induces, thereby greatly endangering the contacts' chances of recovery, provided he already has the disease.

The destruction of the infecting agents may be accomplished by the fumigation and disinfection of the infected house, for the purpose of destroying suctorial insects and surface bacteria. After careful sealing of the rooms, to prevent the escape of gas, fumigation should be performed with sulphur, in the proportion of five pounds to the thousand cubic feet of initial air space. Twelve hours exposure should be given. Formaldehyd does not kill insects or other vermin, and therefore should not be used. Bedding, old clothing and other articles contaminated with the excretions of the patient should be destroyed by burning. The carpets should be removed and beaten, the house swept and the sweepings burned, and the floors washed down with an active antiseptic solution. The yard should be well sprinkled with a strong carbolic solution, and the outbuildings thoroughly limed to inhibit rats, fleas and scavenger insects.

The following excerpt from the instructions issued to medical officers in the field outlines the routine measures for plague infected localities:

Upon the occurrence of a case of plague in a block, and when the infection is thought to have been contracted in that locality, concentrate a sufficient force to carry cut, in as short a time as possible, the following measures in addition to the disinfection of the infected house.

1. A rapid sanitary survey of the infected and contiguous blocks. (a) Note the cases of sickness at the time and for the past six weeks in each house; (b) number of stables, their condition as to sewer connections, character of flooring, number of stalls, and the meat markets and bakeries for the same conditions; (c) sanitary condition of occupied premises and vacant lots with regard to rat food and harboring places; (d) note the prevalence of rats, and especially if dead rats have been seen recently. The inspector will enter every house in search of this information and impress on householders the necessity of destroying rats and rat-food, and of making their homes rat-proof. If a case of plague has gone unrecognized in the family, as shown by the sanitary history of the house, the facts should at once be reported to headquarters.

2. The rat-holes and runs in the infected and adjoining houses should be flooded with carbolic solution (1 to 40) or bichlorid of mercury solution (1 to 500) and then treated as follows: Holes in wooden floors to be sealed with tin or sheet metal; brick or concrete, with cement; earthen holes to be filled with broken glass and brick.

3. (a) Place poisons, preferably phosphorus and arsenic pastes, in holes and runs in the infected and contiguous blocks; (b) place traps, both spring and cage, over the same ground. (c) Danysz' virus of high virulence should be placed in cellars, kitchens and households generally.

Depopulation of infected sections with the destruction of infected buildings has succeeded in several instances in the present epidemic in stopping the march of the disease. This applies particularly to the irregular camps in the North Beach and Lobos Square districts. In dark, damp places, without adequate means of ventilation, alterations should be made to correct these insanitary evils. Lime-washing is an old but effective measure, and may be applied by spray pumps or brushes.

When plague continues to manifest itself in a house, or a locality after a thorough disinfection has been done, make a careful search in the neighborhood for the cause of the continuance. All harboring places and places in which rat-food is found in abundance should be looked on with suspicion. Defective wooden floors, and walls of the infected house and the adjoining houses may be torn out and a search made for rat cadavers. Stables and restaurants may be treated in a like manner. In 1903, 87 dead rats were found in the walls of a Chinese restaurant. Eleven rats showed plague infection. After the destruction of this focus no further cases occurred.

"When plague has once occurred in a house there is a great tendency in subsequent years for the same house, or that adjoining, or that on the opposite side to be attacked with plague" (Simpson). This may be accounted for by the lack of protection against the ingress of rats. Such houses on inspection will show rat-holes, burrows and free entrances in the basements, and refuge-places in the ceilings and walls. Obliterate them and plague will not reappear.

It is a curious fact that the morbidity and mortality rate from plague in rats is frequently low. This fact probably assists in keeping the disease alive, for if it spread rapidly among the rats they would soon be exterminated and the chief source of infection to human beings would cease. Under the closest observation during the Hong Kong epidemic only 7 per cent. of the rats examined had plague, while in the present epidemic in San Francisco the percentage has been found to be less than one per cent. The disease also exists in chronic forms in rats, the bacteria being encapsulated in the viscera and cervical and inguinal glands. The service laboratory in Chinatown, during the previous epidemic, demonstrated the virulence of the organisms recovered from the bodies of such rats. These rats were found alive, emaciated to be sure, but still ambulatory foci for the spread of the infection. This, in my opinion, is one of the principal causes of the continuance of the disease and the long intermissions between cases.

The connection between rats and human plague is a matter of ancient observation and is recorded in the literature of the Assyrians, Hebrews, Egyptians and Greeks. The researches of modern times have confirmed these observations, and a great deal has been added to the literature of the rat, especially in relation to plague. Three varieties have been found in San Francisco: *Mus decumanus*, the so-called Norway rat, is the most common; *M. rattus*, the black rat, is less frequent, while a sub-variety, *M. alexandrinus*, is still rarer; *M. musculus*, the common mouse, is very numerous.

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Types of the disease in rats: "In Hong Kong (second epidemic), the blood showed the organism (septicemic) in 100 per cent.; spleen, 92 per cent.; lungs, 38 per cent.; intestinal contents, 33 per cent.; urine, 16 per cent.; mucus of mouth, 22 per cent.; in all cases examined" (Simpson). These figures illustrate the dangers to be apprehended from the entrance of plague-sick rats into a house, and explain how infections of the lungs and alimentary canal may ensue from breathing or eating the dried excretions of the animal. The flea, while an important factor in the dissemination of infection, is not the only one to be reckoned with in eradicating the disease.

This knowledge suggests several important measures in plague eradication; namely: 1. All houses should be made rat-proof. 2. The screening and protection of food. 3. Disinfection of infected houses to destroy bacteria as well as suctorial and scavenger insects.

In a study of 310 human cases in Hong Kong there were: Bubonic, 55 per cent., divided into femoral, 35.4 per cent.; axillary, 21 per cent., and inguinal, 0.6 per cent.; septicemic, 40 per cent.; pneumonic, 4.1 per cent. (Simpson). The large number of septicemic cases, showing mesenteric and retroperitoneal glandular involvement, would indicate infection through the alimentary canal by contaminated food.

The fact is often overlooked that it is as important to find and eradicate plague infection among rats as it is among human beings. Careful search, then, should be made for the cadavers of rats during plague times. Those that have died recently should be sent in for bacteriologic examination; bodies in which putrefaction has occurred should be burned. The measures that should be adopted to stamp out rat-plague are the same as those recommended for human plague. Every rat focus should be considered as a possible human focus, and the most active measures instituted immediately on its discovery. Rat contacts should be kept under observation and inspected daily for a period of seven days.

All defective buildings in which rats dead of plague have been found should be vacated at once to prevent the occurrence of the disease among human beings. The same rule applies to adjoining houses. Buildings in which plague continues to appear, in spite of the measures enumerated above, should be vacated and destroyed. These rules are in addition to careful general sanitation, the disinfection of infected houses, and the isolation of those sick of the disease.

Of the means employed in San Francisco for the destruction of the rat, trapping and poisoning on a large scale are chiefly relied on. Two varieties of traps are used, the cage and the spring, or snap-traps. These are apportioned between the laborers, one of whom cares for from 30 to 40 traps in a forenoon, the afternoon being used in placing poisons. Cheese, bacon, fish, sausage, green fruits and vegetables are used for bait. The poisons used have included plaster-of-Paris flour, phosphorus and arsenic pastes. The latter two are the most reliable. The pastes are made by heating together cheese, lard or suet, rye flour and sugar and incorporating the poisonous element while the mass is cooling. During the Chinatown epidemic (1903), exalted cultures of Danysz' virus were used with great success. Fifty per cent. of the rats trapped alive and quarantined in the laboratory died of the disease, and the *Bacillus typhi murium* was recovered from their spleens and other organs. On account of rapid deterioration Danysz' virus should be distributed at frequent intervals.

As previously stated, all rat food and harboring places should be destroyed. The city should be given a thorough cleaning, the piles of débris removed and lumber piled two feet above ground. All places of human residence should be made rat-proof by the concreting of basements, the screening of all windows and entrances near the ground level, and the careful fitting of plumbing to the holes through which it enters and leaves the house. Stables and markets are a great menace. All stables should be concreted, connected with sewers, have proper manure boxes and metal-lined containers for feed and grain. The stable which does not conform to the above should be condemned and vacated. Warehouses should be similarly rat-proofed and the articles stored therein protected against the lodgment of rats.

In view of the danger of the shipment of infected rats in freight, the wharves and piers should be constructed of stone or concrete and all goods stored thereon placed on platforms elevated from one to two feet above the floor level. Long piers extending into the harbor of a city in which plague prevails should be protected by a drawbridge which can be elevated at night. A less expensive arrangement for the accumulation and temporary storage of cargoes could be made by sectioning off a part of a wharf by rat-proof fences and placing suitable guards on the ceilings, girders and rafters.

There can be no doubt that rats and similar vermin mechanically transfer other diseases from the sewers to human dwellings. Therefore, I would recommend the rat-proofing of sewers. Wherever possible, the old brick and mortar sewer should be replaced by concrete, metal or vitrified clay sewers of proper diameter. The junction of the soil pipe and the main is the weakest point and one brick out of place in this locality forms a point of ingress and egress for the sewer rat who gorges himself with all manner of filth and pollution to return and disseminate the disease germs to man. To prevent stagnation of contents, the sewers should be flushed frequently. This also washes out large numbers of dead rats that have died of plague and may infect their kindred which are liable to feed on these carcasses.

Other infections of the rat are: Trematodes, or flukes; cestodes, or tape worms; nematodes, or round worms; protozoa, or trypanosomes; insects and vegetable microbes. Of the rats examined in San Francisco, 34 per cent. are infested with tape worms; 25 per cent. with trypanosomes, and 65 per cent. with nematodes, and the *Tricocephalus dispar* (Lloyd).

Little has been said of the rôle of the flea in the transmission of plague. While this insect bears an important relation to the transference of the disease, it is not the only factor, and if we destroy the host there is no longer danger of infecting the parasite. I have, therefore, used the short time at my disposal in dealing with what seems to me to be the more important elements in the problem of eradicating plague.

401 Fillmore Street.

The Obstetrician's Remuneration.—We realize that obstetric work is underpaid, but we likewise realize that the medical profession is to blame for this condition of affairs. So long as physicians neglect to give the best of care to patients previous to labor, so long as physicians neglect to make antepartum examinations, so long as physicians are satisfied to say that most cases are normal and that all will end well, so long as physicians continue to practice obstetrics as midwives do, just so long will we be paid, and ought we to be paid, as midwives are.—G. A. Hipke, M.D., in *Wisconsin Medical Journal*.

THE TREATMENT OF GONORRHEA IN WOMEN.*

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In the treatment of gonorrhea in women it is essential to bear in mind that in the great majority of acute cases the disease is limited to the lower part of the urogenital tract, and that if we can bring the patients at once under proper care, we can generally hold the disease in check so that the upper parts of the genital tract will not be infected.

The opinions as to the proper treatment of this affection are as divergent as they were in the case of diphtheria before the discovery of the anti-diphtheritic serum of Behring. There is no unanimity of opinion; each method of treatment has its advocates and likewise its strong opponents. Most authors, however, are agreed in stating that no active treatment should be employed during the acute stage. Cleanliness, restricted diet and rest are recommended in this stage by nearly all. When the acute stage has subsided, local treatment is begun; but in the employment of local treatment the use of vaginal douches is generally discarded. The secretions should be wiped out dry with absorbent cotton. The most favored remedy for local applications is a 5 per cent. solution of protargol. When the cervical canal is infected this remedy is applied by means of an applicator. In corporal infections the remedy is applied to the uterine cavity. Cysts of the vaginal portion of the cervix should be punctured. If the portio is intensely diseased and the affection does not seem to yield to local treatment Augustus A. Hussey[13] advises amputation.

George T. Harrison[15] is, in my opinion, somewhat contradictory in his essay. He says that "in infections of the tubes even the slightest operation on the genital organs may prove dangerous;" yet he highly recommends the method of treatment of the late Dr. Pryor, namely, a thorough curetting to cut off the main source of the infection. He then opens the cul-de-sac of Douglas, and with the finger introduced through the opening, frees the tubes and ovaries. The tubes are then brought out of the opening. Passing a probe through the fimbriated extremity, he inserts a strip of iodoform gauze which is removed when he is through with the rest of the manipulation in the pelvis. Next he packs the uterus and the whole cul-de-sac with iodoform gauze. The uterus is restored to its normal position, and finally the vagina is also packed with iodoform gauze.

J. B. Killebrun[16] favors curetting as soon as possible in acute gonorrheal endometritis. He believes that when the uterus is affected the adnexa are likewise diseased and should be treated. He advocates Pryor's method.

In the early stages Henry T. Byford[18] advocates prolonged irrigation with hot water as a basis, and dwells on its advantage in preventing the spread of the disease to adjacent parts. It does not injure the epithelial covering, and thus it tends to limit the infection to superficial areas; furthermore, it removes more germs and pus cells than either astringents or disinfectants can destroy. Later, when the discharge becomes scanty, the irrigations are not used so frequently, and the application of a non-irritating solution of a silver salt may follow each hot water treatment. Byford's view is correct, so far as my own observation from experience is concerned.

C. F. Marshall[21] considers the treatment with douches insufficient, because it is impossible to reach the whole of the vaginal surface. He advises wool tampons saturated with medicated fluids and medicated soluble pessaries. The urethritis is treated with copaiba and santal. For endocervicitis he employs a solution of sulphate of copper, forty grains to the ounce. If severe, the cervix should be dilated and the uterus curetted.

A. d'Hotman de Villiers,[22] for instance, considers as insufficient for a cure of gonorrheal vulvo-vaginitis all local remedies other than nitrate of silver, which he uses in a strength of 1-20. No internal treatment is ordered by him.

G. Rossier,[23] on the other hand, is a believer in the value of disinfecting injections, and he does not sanction curetting in endocervicitis until all other remedies have failed.

Th. Perrin,[24] for infections of the urethra, cervical canal and uterus, uses medicated tampons applied by means of a specially constructed instrument. These tampons are left *in situ* about fifteen minutes. He considers yeast a valueless remedy, as opposed to the opinion of O. Abraham.[25] In ulceration of the cervix, the employment of the cautery—the earlier the better—is highly spoken of.

Kiss, quoted by Engelbreth,[26] has demonstrated that gonococci soon disappear with the use of plain water douches. He favors the local use of nitrate of silver as the best remedy for abortive treatment.

Dr. Max Ziessel[28] says that in the beginning of the acute stages antiphlogistic measures should be used. In acute gonorrheal endometritis local treatment should not be begun until the acute symptoms have diminished. Curetting should be limited to those cases in which there is copious bleeding.

Dr. v. Franqué[29] warmly recommends mud baths during the residual stages.

Johansen[30] warns against curetting and other intrauterine therapy.

A. Martin[31] uses physiologic salt solution, occasionally with the addition of thymol, etc. He has found yeast to yield most beneficial results.

Rudolph Savor[32] uses vaginal douches containing an antiseptic. Local therapy is not begun until the pelvic organs are no longer sensitive to bimanual examination. Curetting should be avoided, because it does not destroy the glandular structure to the deepest parts, and on regeneration the cocci have a new fertile field.

Massasse[33] favors internal treatment with a mixture containing Rad. sarsaparillæ, Hb. portulacæ, and Hb. veronicæ, in addition to mild local therapy.

Dr. Prowe[34] maintains that the gonorrhea of prosti-

* Part of a paper read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Fifty-eighth Annual Session, June, 1907. The complete paper has been published in the Transactions of the Section and in the author's reprints.

13. Brooklyn Med. Jour., April, 1903.
15. N. Y. Med. Jour., Jan. 7, 1905.
16. Med. News, Jan. 25, 1902.
18. Am. Jour. of Obst., i, 408.
21. Midland Med. Jour., Jan. 1905.
22. Traitement et guérison de la vulva-vaginite Blennorrhagique, 1905.
23. Le blenorrhagie chez la femme, 1902.
24. Rev. Méd. de la Suisse Rom.
25. Centrbl. f. Gyn., 1903, No. 15.
26. Monatsh. f. prakt. Derma., 1903, No. 10.
28. Gonorrhea in Women and Its Complications, Vienna.
29. Centrbl. f. Gyn., 1906, No. 34.
30. Centrbl. f. Gyn., 1903, No. 8.
31. Berlin. klin. Wochschr., March 28, 1906.
32. Die Heilkunde, March and April, 1902.
33. Centrbl. f. Gyn., 1903, p. 64.
34. Berl. klin. Wochschr., Nov. 11, 1901.

tutes can invariably be eradicated so that they will not infect the opposite sex. He further says that endometritis corporis gonorrhea is often primary and the cause of the lower tract infection. Curetting in acute gonorrheal endometritis is advised. Those who were thus operated on remained healthy. Those who were not operated on, on the other hand, after a time came to be treated for swelling of the vulva, salpingitis, endometritis decidua and perimetritis. Those who practiced curetting are, according to Prowe: Doléris, Erand, Trélet, Vulliét and Walton. The objection to curetting is called a theoretical pretext. His deductions are based on 313 cases. In his experience curetting never induced pelvic inflammation. Adnexa disease may be lessened by such radical treatment. He uses a solution of ichthyol after curetting. An irritating application after curetting often provokes contraction of the uterus, which affects the tubes. He further advocates the tamponing of the uterus with iodoform gauze.

It is evident, from the quotations made, how widely the treatment of gonorrhea varies and how futile it would be to look among the therapeutic measures at our command for any specific that could be depended on to abort an attack. He who has seen the suffering a patient endures when treated by the method advised by Ricord, with strong silver nitrate solutions, is not likely to advocate it. Furthermore, we must remember that all remedies so far known (strong solutions of chlorid of zinc excepted) have only a superficial action and do not affect the deeper layers of epithelial cells. Physiologic salt solution, as suggested by Martin, or some mild antiseptic in plain water, has decided therapeutic value to wash away the superficial cocci and is not painful. This treatment should, however, be relied on only during the acute stages. When the acute stage has passed we get quicker results by using more heroic treatment. The silver preparations are by far the most reliable remedies. I prefer protargol in 10 per cent. solution. After all secretions have been thoroughly wiped off with absorbent cotton, the vaginal mucosa is freely painted with protargol solution; a pledget of absorbent cotton soaked in the solution is then applied over the vaginal portion and is held in place by an ordinary wool tampon. If simple erosions are present on the portio, they are painted with a 5 to 10 per cent. silver nitrate solution, this having been found the most effectual remedy. Follicular erosions must be treated by opening the follicles with a scarifier. If urethritis is still present an application is made to the urethra by means of an intrauterine applicator syringe (Fig. 1). The medicament is aspirated into the barrel and the long tip is evenly wrapped with cotton. The patient should have urinated shortly before the application to the urethra, so that the superficial gonococci on the urethral mucosa are washed out. The cotton-wrapped syringe nozzle is then carefully introduced the required distance and the medicament injected into the cotton. This is left in the urethra by compressing the thin tampon at the meatus and withdrawing the syringe nozzle. The cotton is left for ten or fifteen minutes and is then removed by the patient. The ducts about the vulva are carefully examined and, if infected, the secretion is gently expressed and the medicament injected. A cotton pledget saturated with the same solution is placed between the labia and is covered with a non-absorbent cotton pad, which is held in place by a napkin. The treatment is repeated every second or third day. During the interval, the patient is directed to use copious vaginal douches consisting of four quarts of mild boric acid solution about four times daily. So long as the disease remains as a specific urethritis and vulvo-vaginitis, the treatment is comparatively simple, and in most instances it can be limited to these sections of the genital tract, if we can get the patient under care in the early stages of the disease. No internal treatment, beyond restriction in diet, is prescribed. If the ducts of Bartholin are involved, they must be treated on surgical principles. If a cyst forms, it should be exsected. If an abscess results, it should be opened by a long incision parallel to the inner lip of the labium. The cavity, after being cleansed, may be swabbed with pure phenol, followed immediately by pure alcohol, and then packed with iodoform or other gauze.

In instances where the infection remains obstinate in the small ducts, I split them and use the actual cautery. Condylomata are best removed with a cautery knife. Each one is seized with a pair of thumb forceps and cut off, and a dry dressing is then applied.

The use of the silver solutions is based on our knowledge of their strong antibacterial action. Yet the fact that so many are placed on the market makes it evident that there is not one that can be considered infallible. So far as my observation goes, no matter which one of them is employed, the disease takes about the same length of time to cure. Some patients are cured in from four to six weeks, while others are not entirely well after six months' treatment. I have frequently observed that women with subacute infection which has not encroached on parts above the cervical canal do much better if they can keep themselves free from physical exertion. I have a number of times seen women from whom I could no longer get gonococcal secretion, but who, after a couple of weeks' physical exertion, came back complaining of more discharge and of a fullness in the vagina. On microscopic examination, the secretion showed the presence of cocci, due to the fact that isolated gonococci had remained latent in the deeper epithelial layers, while as a result of exertion they had again become active. Generally the purulent discharge increases at the commencement of active local treatment, but soon it becomes less and loses its purulent character. It is important in all cases to see that the husband is made to appreciate the danger of reinfection, so that cohabitation is not permitted until both husband and wife are absolutely cured.

A more serious matter is the treatment of gonorrhea when it has passed beyond the vulvovaginal and urethral tract, so that the cervix, uterine cavity, adnexa or pelvic peritoneum is invaded. A number of physicians, deserving of the distinction which they hold as authorities in the medical world, treat gonorrheal endocervicitis so that the local treatment is limited to that part. After wiping out the secretion with a cotton-wrapped applicator, the vulvovaginal tract having previously been carefully cleaned, an application of the remedy to be employed is made to the cervical canal. If the os uteri is small, as is the case of multipara, the cervix should first be dilated, or, as Brunn recommends, a discision should be made. If a discision is made, the wound must first heal before the local treatment is begun. The remedies mostly approved of are silver preparations. Other applications are the insertion of a strip of gauze saturated with a 5 to 10 per cent. solution of ichthyol in glycerin, the application of strong solutions of sulphate of copper, mild chlorid of zinc solutions, etc. The preference is altogether a matter of individual opinion.

While it must be accepted as correct that for a time the gonococcic invasion may remain limited to the cervical mucosa, it must also be admitted that it is extremely difficult to determine just when in some patients the invasion has reached the uterine cavity. I have, therefore, recently placed myself on the side of those who at once attack the entire uterine mucosa. Opinion on this point is more divided than on any other question involving the treatment of gonorrhea in women.

If a patient permits me to follow my preference, she is put under anesthesia and the genital tract is disinfected with most scrupulous antisepsis. The uterus is copiously irrigated with a double current bladder catheter; then the cervix is dilated slowly and gently so that no tears are caused, but the dilatation should be thorough to be effectual. Next, a thorough curetting is done with a sharp curette. I prefer a Martin curette for the first general abrasion of the mucosa, and then substitute for this a small size sharp curette to use around the tubal openings. After the effectual abrasion has been done, the uterus is again copiously irrigated with plain sterile water or a mild antiseptic solution and is then fully tamponned with a long strip of gauze soaked in a 5 per cent. protargol solution. The rest of the genital tract is tamponned with iodoform gauze and the patient is put to bed. If urethritis is still present, this is at the same time locally treated, as are also the ducts if they are infected. The gauze is removed on the following day and the entire treatment is repeated, excepting the curetting, and again on the third day. The repetition of treatment should not cause much annoyance to the patient if the cervical dilatation has been sufficiently effectual.

If consent to curetting is not given, office treatment is used. An intrauterine application is made by means of the intrauterine applicator syringe. The intrauterine tampon is left in the uterus for two or three hours, and the patient is directed then to remove it, which can readily be done by means of a string which is tied to the proximal end of the tampon before it is introduced. The intrauterine tampon is left in by grasping the proximal end around the silver nozzle with a pair of dressing forceps and holding it while the syringe is withdrawn. A medicated tampon is then placed in the upper part of the vagina, if desirable, and is held in position by a plain non-absorbent wool tampon. The strings of the vaginal tampons are marked so that the patient may know which to extract first. At first the intrauterine tampons are necessarily quite thin, so that they may be readily introduced, but afterward the cotton wrapped around the syringe nozzle may be increased in thickness, because the remaining of the intrauterine tampon causes the cervical canal to become more readily dilatable. After removal of the tampons a copious antiseptic douche is made by the patient. Although every precaution is used as to cleanliness, I consider this treatment not so desirable as the more heroic treatment first described, as it is fraught with more risk of subsequent pelvic inflammation. With my present views I feel justified in calling it "tinkering," and hence not to be employed if a patient will consent to take an anesthetic and have curetting done. It is obvious that other infected parts of the genitourinary tract should also be treated at the same time. The treatment should be repeated every second or third day.

In unusually obstinate cases of corporal gonorrheal endometritis I have a few times, with benefit, resorted to very heroic intrauterine treatment with chlorid of zinc, sometimes as strong as a 50 per cent. solution. It is applied in the same manner as protargol solution, but one should not have more than from three to five drops of the solution in the syringe barrel, depending on the size of the uterine cavity and on the quantity of cotton that is wrapped around the nozzle. If more of the full strength solution is used, there is danger that it will come in contact with the cervical canal and cause a subsequent stenosis, which I have never observed when the quantity was limited to the amount stated.

The disadvantage of the chlorid of zinc treatment is that it sometimes causes intense pain. It is, therefore, advisable to let a patient go to bed for a day or two after its application, in order to determine what its action will be in this particular. Should pain ensue, absolute quiet is insisted on, and also the application of an ice bag on the lower abdomen. Sometimes the pain also necessitates the administration of a narcotic. A further disadvantage of chlorid of zinc solution is that its destructive action may go too deep; thus almost the entire endometrium may become destroyed, with subsequent atrophy of the uterus and the cessation of menstruation for a few months.

In using the solution with the precaution mentioned I have never seen it cause such a result permanently; the longest resulting amenorrhea lasted five months. I repeat, however, that this treatment must be reserved for the most obstinate and protracted cases. It takes from three to five days before the intrauterine tampon is sufficiently loosened to permit of its removal. I have seen only one instance in which it was necessary to repeat the treatment more than three times, and usually one or two treatments suffice. I have never been able to observe any marked beneficial action from the use of iodin, which, besides, causes considerable pain, just as often as does the intrauterine use of chlorid of zinc.

THE INTRAUTERINE APPLICATOR SYRINGE.

The advantage of a perfectly-made intrauterine applicator syringe (Fig. 1) over all other methods for applying intrauterine medication through a cervical canal that has not previously been dilated by mechanical means, can not be overestimated. The tip should be four and one-half inches long and slightly curved near its terminal end. It should be absolutely smooth and even in its entire length and have only one opening at the terminus. It should be made perfectly tight at its proximal end so that no fluid can escape there while the medicament is being ejected into the cotton. The medicament comes into direct contact with the parts for which it is intended, because the cotton is soaked first at its very end and is gradually saturated with the medicament from above downward. If, on the other hand, the medicament is applied by means of one of the various applicators that are on the market, the active value is lost to a greater or less extent in its passage through the cervical canal. This holds good especially with nitrate of silver solution, which becomes coated with albuminoids before the applicator reaches the fundus. Besides, if it is intended to use a medicament possessing irritating qualities, as, for instance, tincture of iodin, the passage of a medicated applicator is more or less impeded through a cervical canal of ordinary diameter. It took a long time for me to get the instrument perfected in all its requirements. The ready leaving of the intrauterine tampon *in situ*, if this is desired, is facilitated by slightly anointing the tip with vaselin.

While the treatment by copious intrauterine irrigation

with weak antibacterial solutions gives fairly satisfactory results, as is evidenced by the number of its adherents, yet in my hands it has not been so satisfactory as the before-mentioned methods, especially that with curetting. Furthermore, with the latter method the danger of the irrigating fluid entering the peritoneal cavity is obviated, if the treatment is properly carried out and the pressure is not too great.

It should be remembered that even after the disappearance of the gonococci in the secretions there is still some discharge, which is best eradicated by the use of mild astringent douches.

In case of menorrhagia, which sometimes complicates gonorrheal endometritis, I have found patients to be benefited by the internal administration of hydrochlorid of cotarnin. This is given in doses of three grains, in gelatin capsules, three times daily, if the previously instituted treatment did not have the desired effect; alone, however, without local treatment, as curetting, it gave unsatisfactory results.

There is a class of patients in whom menorrhagia and metrorrhagia are almost uncontrollable; this condition tries the endurance of both patient and physician to the extreme. Such patients are multipara with firm uteri, and in connection with the gonorrheal infection they have a chronic metro-endometritis. I have tamponned such women with gauze saturated in strong solutions of ferropyrin, iodoform gauze, etc., practically without any benefit. The best remedy that I have found in such cases was to await a non-bleeding period and then make intrauterine applications of pure carbolic acid, leaving the intrauterine tampon *in situ* for a couple of hours. The treatment must be repeated every second day until from six to eight treatments have been applied, and at the next menstruation interval it should be repeated. Despite the dangers mentioned by a number of authors in connection with the local application of carbolic acid to the uterine cavity, I have not seen an instance of serious result, although I have made the application hundreds of times.

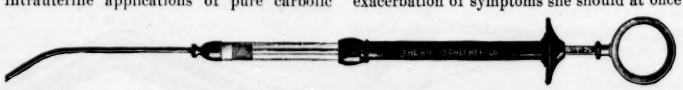

Fig. 1.—Intrauterine applicator syringe.

INFECTIONS OF THE ADNEXA.

We now come to that class of patients in whom the invasion of the disease has passed beyond the limits of the uterus. In acute gonorrheal infections of the adnexa, with or without invasion of the pelvic peritoneum, it is of the greatest importance to enjoin absolute rest in bed and the application of an ice coil. If this is not readily obtainable, ice bags will do or, what I have found still better, a mixture of cracked ice with linseed meal, made into the shape of a large poultice and applied to the abdomen.

It is further desirable to keep the intestinal peristalsis at a minimum, and for this purpose the administration of some form of narcotic is necessary; this preferably should be so administered as not to tax the stomach, which can best be done by the employment of suppositories. If the diagnosis of an acute inflammation of the pelvic organs has been made, subsequent local examinations should be avoided, unless there is a special reason for making a bimanual examination, because even the slightest traumatism may be productive of harm. Should it be desirable to make a bimanual examination the greatest care should be exercised to avoid rude handling.

In most instances where the patients are treated by the method outlined, improvement begins to show itself in a few days. This, however, should not lead us to permit the patients to be less careful, and we must give them the most nutritious and easily digested food stuffs during the entire course of their illness.

As soon as the most acute symptoms have subsided we may begin with warm vaginal douches containing a mild antiseptic. The douches should be of large quantity, at low pressure, and be given at frequent intervals. The cold applications should not be discontinued until the temperature is normal and the patient is free from pain. Neither should such a patient be permitted to leave her bed until the temperature has remained normal or nearly normal for at least a week. After the subsidence of the acuteness of the ailment we may, with benefit, begin with local treatment consisting of sufficiently large absorbent cotton tampons to cover the entire vaginal roof, saturated with a 5 to 10 per cent. solution of ichthyol in glycerin and held in place by a wool tampon. The tampon should remain in place for from twelve to twenty-four hours, and after its removal the patient should use a copious hot water douche. The temperature of the water should be as high as the patient can bear without discomfort. Intrauterine treatment must still be avoided, even if the discharge from the cervical canal is purulent, because of the danger of causing a fresh attack of salpingo-oöphoritis with pelvioperitonitis. Should the patient at any time show an exacerbation of symptoms she should at once be returned to bed and the rest treatment be resumed. Once the adnexa have been implicated, intrauterine therapy should never be used until all evidence of adnexal disease has disappeared, unless, as will be considered later, it is intended to resort to a thorough surgical intervention.

Furthermore, frequent bimanual examinations during the course of absorption treatment are to be avoided. It will be found that most patients will make a good recovery by employment of the conservative treatment outlined, and some may even go to a *restitutio ad integrum* and subsequently become pregnant.

Should at any time the Fallopian tubes become distended with pus and gravitate to the floor of the pelvis so that a bulging is felt behind the uterus, further delay with the purely conservative treatment should not be practiced, not even in the presence of acute pelvioperitonitis, although we know that by a continuance of the treatment as previously outlined, the danger to life is not only not imminent, but, in fact, the majority of such patients recover from the attack. I believe that it is a better and safer procedure for the patient's future to resort to surgical treatment. The patient should be anesthetized and the cul-de-sac of Douglas be widely opened. For this purpose I prefer the pelvic abscess instrument (Figs. 2 and 3) which I devised some years ago, for the greater safety in not causing injury to the larger blood vessels in the case of such a large opening. The Fallopian tubes can then be incised and evacuated, and a strip of gauze placed in the incision after they have been washed out, to prevent the incision from

at once closing. The uterus at the same time should be thoroughly curetted and packed with a strip of gauze saturated with whatever medicament is preferred. The cul-de-sac should now be packed with iodoform gauze. The dressings should be changed as frequently as may be necessary; the first dressing may be allowed to remain in position three days, but after that the dressings usually need to be changed every second day, if not every day, this depending on the amount of secretion which exudes. While I have never seen a complete *restitutio ad integrum* in any such case, nor a subsequent pregnancy, yet the latter possibility has been reported by a number of other observers. A symptomatic cure will result often by this method of treatment, more often, I believe, than if the non-surgical treatment is relied on. The recognized surgical axiom, "where there is pus evacuate it," is applicable in such cases.

Some patients do not recover either by purely conservative medical treatment or by conservative surgical treatment mentioned for the acute cases which develop large pyosalpinx tumors that are attached to the pelvic floor. These pyosalpinges do not settle low down in the pelvis, so that they are not readily approached through the vagina, nor do they attain such size as do those to which allusion has been made as being on the pelvic floor and are best treated by simple incision and drainage.

The patients to whom I now refer have made a good temporary recovery from the acute stage, but they have not regained their health. They suffer more or less

Fig. 2.—Pelvic abscess instrument. For opening Douglas' cul-de-sac.

Fig. 3.—Pelvic abscess instrument. For dilating the opening made in Douglas' cul-de-sac.

pain either constantly or at varying intervals; their menstruation is perhaps irregular and perhaps also painful. Occasionally they have an exacerbation of the acute symptoms which they originally had, although usually in a less marked degree. On bimanual examination one finds the objective symptoms of salpingo-oöphoritis, with a condition of the uterus which may be recognized as metro-endometritis; the organ is perhaps somewhat enlarged, and it may be harder or softer than normal. Its mobility is usually more or less impeded by adhesions, and perimetritic exudate may also be present. The Fallopian tubes are more or less distended with pus, which is recognized by the doughy sensation imparted to the examining finger. It may be that the uterus and adnexa are so matted together in the perimetritic exudate that the pelvic organs feel like a single inflammatory exudate. It may be possible to demonstrate the presence of gonococci, although usually they are not to be found in the urethral, vulval, glandular or cervical secretions in these cases; indeed, they are frequently absent in the pus contained in the tubes, and nearly always so in those patients who have been ill a very long time.

The life of such patients is perhaps seldom or never menaced, if they keep out of the hands of physicians who use intrauterine treatment in such cases or who curette indiscriminately. The health of these patients, however, is undermined. If they belong to the poorer class, those who must attend to their household duties—and the majority of the women who are ill with these affections belong to that class—they should be relieved by operation. Local treatment, no matter of what kind, has been found useless in my experience. Surgical treatment is the only form that holds out some hope. The only question is as to which form of surgical intervention is the most desirable, and here we have one of the numerous classes of women's ailments for which the "specialty of gynecology is not passing," despite what Roswell Park said in his excellent address at the last year's meeting of the New York Medical Society.

To decide what to do in this class of patients demands the experience gained by having under observation a large number of such patients.

Some prefer to do a radical vaginal operation in all instances in which bilateral tubal affection has been diagnosed. I am opposed to such a radical view, as I have stated in an address at the January meeting of the College of Physicians of Philadelphia.[35] There I made it clear that we frequently get a satisfactory result by doing a salpingectomy, provided the tube is exsected from the cornu of the uterus, and in the cornu from which the tube was exsected we implant the corresponding ovary, or a part of it.

I stated then that it seldom became necessary to sacrifice both ovaries. Since the delivery of that address it has been my good fortune to have had several cases in which, despite their apparent hopelessness, it was possible to do conservative surgery. What the remote results will be in those cases one can not yet predict with certainty. I can, however, add two additional cases to those cited in the article referred to, in which the ultimate result from the conservative operation was excellent. This means that if there is some reason to expect that conservative technic can be practiced, the vaginal method should not be chosen, but the abdominal route should invariably be selected. If it is necessary to sacrifice both ovaries, then the uterus also should be extirpated.

There is still another class of patients, those in whom the disease has to a large extent become spontaneously cured, so far as the pyosalpinges are concerned, while the residue of old chronic pelvic inflammation is still present. This consists of chronic inflamed adnexa, the tubes thickened and adherent but not containing pus, the ovaries also in a state of chronic inflammation, and the uterus either smaller or larger than normal. Especially in those instances in which the organ is smaller than normal it is likely to be displaced and adherent as the result of an old perimetritis. Menstruation in this latter class of patients is likely to be at long intervals, say from six weeks to three months. In some cases it may be frequent, at intervals perhaps of only two or three weeks, and the amount of blood lost is likely to be variable and the dysmenorrhea usually severe.

When we go carefully into the history of these pa-

35. Am. Jour. of Obst., April, 1907.

tients, it may seem doubtful whether, in some instances, they had at any time a suppurative condition of the adnexa. Yet these women, when we get them under our observation, are chronic invalids, despite the fact that they look well, so far at least as their appearance is concerned, if one is to judge from the sometimes ruddy face and the stoutness of some of them. Local therapy rarely benefits these women, who in the majority of instances have always been sterile, but occasionally have had one child. One must exercise judgment as to therapeutic measures. If the suffering is such that the women find it difficult to pursue their vocation because of pelvic pains, and if they have attained an age past the middle of the thirties, a radical vaginal operation is likely to be the most expedient to afford them relief. If younger, then a salpingectomy should be resorted to. In all instances in which a salpingectomy is contemplated, a thorough curetting should precede the opening of the abdomen; not infrequently a ventral fixation of the uterus may become a desirable adjunct of the other surgical treatment. In all instances in which a conservative operation is resorted to, we must state clearly to the patient that the object of the proposed operation may not be achieved by conservative measures, that after a radical operation may eventually become necessary, and that she must herself assume the responsibility of deciding what is to be done.

UNRECOGNIZED GONORRHEA IN THE FEMALE.*

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We readily recognize gonorrhea in the male. We diagnose, under difficulties, gonorrhea in the female. The element which attracts attention in the male is the primary urethritis, accompanied by pain, burning and discharge. From this come all the subsequent troubles. Through this urethral channel the various genitourinary complications arise. In the female the urinary and genital organs have separate canals and urinary and genital involvements by gonorrhea may occur independently or may be of different degrees of severity. An originally acute localized involvement in women often attracts little or no attention. A subacute invasion may, and frequently does, attract no attention at all.

An acute urethritis in the female often causes such slight annoyances that the patient does not seek the services of a physician. Acute gonorrheal urethritis in the female has a tendency to heal without treatment in six to eight weeks. In other cases the discharge gradually becomes less, the symptoms improve, but a secretion persists, either because of the deep involvement of the mucosa of the urethra or because of an involvement of the urethral glands. Such a condition can be seen to develop after an acute gonorrheal urethritis. Chronic urethritis is apt to be found if every case is carefully examined. In some of these cases the urethra remains diffusely infiltrated for months and years and the secretion consists almost entirely of pus cells, and gonococci can be found by careful examination. Macula gonorrhoica are often present.

Many women, however, come suffering from chronic urethritis without any marked evidences of genital lesions, though in many cases there is an associated cervical catarrh. Massage of the urethra done several hours after the last urination discloses a white, milky mucoid discharge. The urethra may be sensitive and infiltrated. Examination of the discharge shows a few pus cells and huge numbers of squamous cells of various shapes and sizes. Bacteria and cocci of different forms are often present, but no gonococci are found. There may be a history of relatively acute onset, the symptoms manifested at that time being frequency of urination and burning micturition. The findings under the microscope in patients seen for the first time years after the beginning of their annoyance are exactly like those obtained in some of those acute cases which become chronic under our eyes. Is the same etiology to be considered? The clearest cases are nulliparæ in whom no pregnancy could have produced a septic involvement of the urethra and in whom there never was opportunity for the production of a catheterization cystitis and in whom no fistulæ are present. The absence of gonococci in the secretion and the presence of pyogenic cocci and bacterium coli is no reason for excluding an original gonorrheal etiology. I am of the opinion that the majority of such cases are due to a previously existing gonorrheal infection.

The unusual location of a gonorrhea may prevent its recognition at that particular point. Involvement of the anus and rectum by the gonococcus is by no means so rare in children and certainly not in adults. Baer found that in 191 cases of gonorrhea there was rectal involvement in 30 per cent. There is a sensation of heat and burning increased on defecation and characterized especially by fissures. In four cases in children and in many cases in adults suffering from fissure of the anus, pain on defecation, sometimes accompanied by the presence of blood, I have been able to obtain smears in which the gonococci were readily found. I have been surprised to find this condition in several cases in adults who complained only of the rectal annoyance and who had not the slightest subjective symptom of a gonorrheal infection. That such a rectal and anal condition may exist without the finding of gonococci is to be expected, for a study of gonorrhea in other locations shows that eventually secretion is diminished or absent and the cocci disappear or can not be found. In the majority of such cases we should find objective evidences of a cervico-uterine involvement.

Because the symptoms resemble other conditions, a gonorrheal etiology is often overlooked. A gonorrheal infection in children may spread upward into the uterus, up through the tubes and involve the peritoneum with such rapidity that the vulvo-vaginitis has scarcely time to attract attention. In other instances the vulvo-vaginitis, as is the rule, causes so few annoyances that little attention is paid to it. An involvement of the pelvic peritoneum and of the general peritoneum by the gonococcus is by no means unknown in children. It occurs with all the evidences of peritonitis and is sometimes very sharp in its onset, producing rigidity of the recti, temperature, pain, vomiting and abdominal distension. In the absence of a recognized cause, it is generally diagnosed as appendicitis and frequently operation is performed for this indication. The rule should be formulated that every attack of peritonitis in female children which simulates appendicitis should have the gonorrheal possibility excluded. While operation is not

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followed by bad results, yet these cases improve on symptomatic and non-operative treatment.

The same point holds good in adults in those cases where there is rapid upward extension and infection, there being often no local symptoms whatever to call attention to the specific etiology. The symptoms are those of a peritonitis. In those instances in which adhesion of the tube does not occur quickly and in which the pus is poured out into the peritoneal cavity and is accumulated in the cul-de-sac of Douglas, bimanual examination in patients with very tender abdomen and with rigid recti may give no tangible evidence of involvement of the adnexa. The diagnosis may then be in doubt. In such cases where a local specific infection is not thought of, and looked for, the diagnosis of appendicitis is often made and only operation discloses the real condition of affairs. In gonorrheal peritonitis, the appendix is as a rule reddened, inflamed and edematous, and if a small incision be made, the real condition may be overlooked.

A frequent cause of failure to recognize the existence of gonorrhea is due to the mild nature of the infection. To most of us, if the first five days after labor are passed without a rise of temperature or pulse, the probability of a postpartum infection of any sort is generally not feared. Yet there are cases in which, at the end of the first week, or more particularly at the second week, rises of temperature, not always high, are noted. Examination may show no parametritis, no involvement of the peritoneum, there may be no pain. Frequent and continued examination of the lochia will disclose in many of these patients the presence of the gonococcus. Continued routine examination persistently carried out in obstetric clinics often shows the gonococcus to be present in postpartum cases even when no rise of temperature is noted. Krönig examined 179 cases of puerperal endometritis and found gonococci in the lochia of 50. Dr. William S. Stone reported seventeen cases, which were studied in the wards of the Lying-In Hospital in 1904, and were collected from 172 cases of pregnancy. Only selected cases were examined for the gonococcus, and in suspicious cases repeated examinations were made until positive or negative results could be obtained. In these seventeen cases gonococci were found. All of these seventeen patients were primiparæ, although a certain number of multiparæ were delivered in the clinic. Bumm says that although in the cervix of pregnant women cocci may be found only in small numbers, yet in the lochia from the cervix and uterus on the second to the fifth day postpartum they are found in huge numbers. Toward the third week of the puerperium they are hard to find if the secretion becomes mucoid. In some cases it is easy to find them for weeks if the secretion is not mucoid. In the early puerperium there is generally no fever and no symptoms. If there is temperature it is low and lasts for two or three days. This is either due to an absence of extension or to a slow extension or to slight virulence. In the late puerperium, after the patient gets up, there is observed a marked tendency to an ascending inflammation.

Such involvement results in the so-called "one-child sterility" and in changes in the tubes.

Gonorrhea is often unrecognized because the original characteristics have worn off in the course of time.

When an abscess involves the gland of Bartholin and calls for incision, very few doubt that the gonococcus is at fault. There are many instances of gonorrheal infection of the gland of Bartholin, in which no abscess results. The duct is not closed and in the course of time, the discharge becomes less purulent, finally becomes mucoid and often of a normal color. If then atresia or obstruction of the duct occurs, a cyst of the gland of Bartholin results. While not generally so considered, there is no reason to doubt that many of these instances are to be referred to a gonorrheal infection of the gland, existing perhaps for years, and even to be referred back to the time of childhood. Therefore, the resulting cyst contains an accumulation in which no gonococci are found and which seems under the microscope scarcely pathologic.

The finding of purulent secretion and the absence of gonococci therein under microscope does not exclude gonorrhea. Vulvo-vaginitis in children is attributed to various irritative causes, to various saprophytes and bacteria and to the gonococcus. In children an acute vulvo-vaginitis with purulent discharge, in which the gonococci can be found, is by no means seldom. When the condition becomes less acute, although numerous pus cells are present in the discharge, gonococci are not so readily discovered. At a still later stage, when the pus cells are still fewer in number, it is a wearing task to find gonococci. In those long-continued chronic cases there is involvement of the cervix and of the uterus and, as is also observed in the adults, the microscopic finding of the gonococcus is by no means an easy procedure. The vaginal speculum in children shows a granular vaginitis and cervical erosion. Therefore these old chronic forms as well as cases which are subacute and nonvirulent from the beginning are often considered, because of the absence of gonococcus findings, as due to other bacteria, whereas a large proportion of them are undoubtedly gonorrheal in etiology.

In diagnosing chronic gonorrhea of the cervix and uterus in adults we are dealing with greater obstacles than hamper the genitourinary surgeons in making their microscopic examinations. It is rare that a gleet or a pathologic prostatic secretion or threads in the urine appeal to anyone save as an evidence of a previously existing posterior urethritis of gonorrheal nature. In women other bacteria are concerned in producing inflammatory involvement after labor, abortion, artificial abortion, etc. When looking for gonococci in the prostate one may use the so-called beer or coitus or silver tests and by massage of the prostate may obtain a secretion showing gonococci. In women we are limited to frequent examination, especially after menstruation. The advisability of using intrauterine applications for increasing the secretion is a matter of dispute, but when done is of great aid. In women we find still greater difficulty, for the cervical mucus makes the discovery of gonococci by microscope or by culture difficult or impossible. Gonorrhea in the female may heal to all intents and purposes, as well as in the male. Fluor is reduced to a minimum and no evidences are present in the external genitalia. In fact, in the vast majority of cases no alterations are present in the external genitalia. A history such as is always present in the male is often absent. If in a chronic prostatitis gonococci can not be found and if the chronicity of the lesions is attributed to other associated bacteria or cocci the disease is nevertheless gonorrheal in origin. The same is true in women, for when other bacteria and cocci come into the field the gonococci tend to disappear. We must parallel the experience of genitourinary surgeons and adopt the principle that the absence of gonococci

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in a pathologic cervical and uterine secretion or even the absence of an evident secretion by no means of itself excludes the gonorrheal etiology of an active or passive, objective or subjective alteration of an inflammatory nature.

The use of the microscope has done much to hinder the diagnosis of old or subacute cases of gonorrhea in adults. A casual examination resulting in the discovery of no negative Gram diplococci has in innumerable instances excluded gonorrhea as the cause. In old cases the staining of several slides and several hours spent in their study are necessary to the finding of the much sought for cocci. When gonorrhea of the cervix and uterus becomes chronic, the discharge lessens and becomes mucoid or mucopurulent and mixed with many squamous epithelia which may contain cocci. When this occurs, says Bumm, the prognosis is doubtful for the cocci may disappear for weeks and then reappear. The only symptom is discharge which is mucoid and often yellow or green, yet according to Bumm gonococci may be present even when the mucus is clear. Chronic gonorrhea of the cervix and uterus, according to Bumm, means the presence of mixed bacteria, together with the gonococci, a fact which still further confuses an attempt at diagnosis by microscope or culture.

Are we in a position clinically to diagnose chronic gonorrhea when few pus cells and no gonococci are found? I believe certain cervical alterations are of importance in this connection, especially when a chronic urethritis is not present, when macula gonorrhoica or other external evidences are absolutely absent, and when tubal and peritoneal changes are not marked.

Erosion of the cervix is a condition which is extremely frequent and generally noted in nulliparæ suffering from cervical or uterine catarrh. It is due to the maceration and destruction of the squamous epithelium about the external os and its replacement by the cylindrical epithelium which normally lines the cervix. When this condition exists in nulliparous women who have not been curetted, or in whom other means of infection are to be excluded, a gonorrheal infection must be considered. (After close observation, I have adopted the axiom that cervical erosions plus a pathologic cervico-uterine discharge in nulliparæ is presumptive evidence of cervico-uterine gonorrhea.) In addition to erosions, there is often a characteristic cervical catarrh. The cervix is dilated, there is an extremely thick plug of mucus filling the cervix and protruding from the external os. Its color is white or yellow. With it there is a reddened external os, if erosions are not present. Examination of the secretion shows mucus, squamous epithelia, and many leucocytes. Pure pus in this cervical type is not found. The mucus has a destructive action on all the cells which are taken up in its structure and their form is changed. Bacteria are almost never found in the mucus. For that reason, gonococci, unless the cervical wall is scraped or unless the uterus is actively involved, are very rarely found. This condition is seen to develop in patients who have been treated for localized cervical gonorrhea, and is most frequent in those cases in whom the main activity of the gonococci seems to be limited to the cervix.

When such a cervical condition is found in nulliparæ and when present to a marked degree in uniparæ, it is to me extremely suggestive of the existence of a cervical gonorrhea, even if no erosions are present, and even if no involvement of the adnexa can be made out. I base this opinion on the fact that many such patients have salpingitis and oöphoritis and on the finding, in one-third of the cases, of gonococci after prolonged examination. Another diagnostic aid is the examination of the posterior parametrium.

Parametritis posterior is a very frequent condition. This is a lesion which occurs in nulliparæ and, especially in women who have borne one or more children. In the latter it often manifests symptoms shortly after childbirth, but may give no symptoms then. It consists of a slowly progressive chronic infiltration of the uterosacral ligaments and the pelvic connective tissue, surrounding the posterior fornix. The parturient cases have only slight or no temperature reactions, suffer from pain in the back, convalesce slowly. Bimanual examinations show an exceedingly tender, edematous or infiltrated posterior parametrium. There is also present a reddened external os and slight or large amounts of cervical discharge. Careful early examination in these cases may disclose the gonococcus. In other cases the gonococcus can not be found, but the parallel with other instances makes this etiology extremely probable. When this condition continues, there results a sclerosis of the uterosacral ligaments on one side, or both sides. Associated with it is a chronic cervical catarrh, though the latter in the course of time may so improve as to give only minimal evidences. This condition is by no means infrequent in nulliparæ suffering from chronic cervical catarrh, in whom no other factor but gonococcus can be referred to as the cause. Its presence in nulliparæ in conjunction with erosions, red external os and pathologic cervical discharge means, for me, the diagnosis of gonorrhea.

Those who have observed the tendency to the indiscriminate use of the curette for the cure of primary sterility and for the cure of uterine catarrh, have noted that in many cases the cervico-uterine catarrh did not improve, that in some cases it was made distinctly worse and that in many cases the eventual result of dilatation of the cervix and of the curettage, was pelvic pain. Examination discloses an involvement of the parametrium on one side or the other, or an inflammatory involvement of the uterine adnexa of one side or both sides. In fact, a large proportion of cases of sterility associated with pain which I have had the privilege of observing, are in patients who have been curetted for primary sterility. Infection of the usual septic character can often be excluded and we are forced to the conclusion that dilatation of the cervix and curettage often set into more active being the slumbering cocci of a non-recognized gonorrheal catarrh of the cervix and uterus.

There is found in many women suffering from sterility, and especially in such as have been curetted for sterility, a mild one-sided or double-sided salpingo-oöphoritis, associated with pain in the region of the ovaries. In these cases there may exist erosions or cervical catarrh, or these conditions may not be marked. If tuberculosis can be excluded and if a previous appendicitis has not existed, the cause in the vast majority of instances in nulliparæ is to be referred to a mild gonorrhea. On operation these cases not infrequently show closure of the tubal ends or adhesions around the tube and ovary which to all intents and purposes close the ends of the tubes. This condition is frequently one-sided and, after abdominal operation and more frequently if a curetting be combined with the operation, an extension to the other side in the course of time is noted. (In this condition there is not in-

frequently found small cystic degeneration of the ovaries. Particularly in those cases in which the ovary contains one large cyst the size of a walnut the probabilities are that we are dealing with an infection of a ruptured Graffian follicle which, after closure, becomes distended by the accumulation of secretion within it.)

Sterility in very many cases is to be referred to such lesions of the tubes. Given a sterile woman with well developed uterus and ovaries (if the spermatic fluid is found normal), and, if stenosis of the cervix and the internal os can be excluded by treatment or operation, the cause of the sterility must be referred to the tubes. Such cases are frequently found after curetting. We may safely take it for granted that there exists a mild inflammatory involvement of the Fallopian tubes, perhaps only markedly affecting that part close to the uterus, but sufficient to interfere with the activity of the ciliated epithelium. As a result the ovum can not enter the uterus and sterility is the sequence. In this way can be explained many cases of pregnancy occurring years after marriage, especially in those cases where treatment was finally given up and several years have elapsed during which time the natural resistance of the patient has restored the tubes to a normal condition.

The cause of ectopic gestation is to be referred, in the majority of cases, to some obstruction in the inner lining of the tube. There is either a mild fresh salpingitis, or there is an old nearly cured salpingitis. The ciliated epithelium in the outer end of the tube is not yet involved or else has been restored to normal activity, but beyond that the tube is either obstructed by adhesions of tubal mucosa or by an edematous mucosa or else the ciliated epithelium is not functionating. The finding of cilia in sections of the inner area of the tube has been very extensively used as a refutation of this causation. It may be said that finding cilia is no proof of their activity, for even in pyosalpinx in certain areas the ciliated epithelium is to be found. Therefore, an ovum given off from the ovary, if fecundated, passes along the tube up to the point where there is an obstruction or edema or where ciliated epithelium no longer functionates, rests there, continues its growth, and ectopic gestation results. The occurrence of ectopic gestation after long periods of non-artificial sterility, the occurrence of repeated ectopic gestation, the frequent finding of adhesions or "scars" on the tube and the by no means rare involvement of the opposite tube speak for such a tubal alteration in many cases. In several cases in which at operation I paid particular attention to the opposite tube, there was found a thickened tube with closed outer end. Adhesions were present about that tube and ovary, i. e., alterations of such a character as to warrant removal. Therefore I am of the opinion that gonorrheal infection is the cause in a goodly proportion of cases.

The main reasons why the conditions to which I have referred constitute unrecognized forms of gonorrhea are threefold. Either the original gonorrheal infection was so situated as to cause bearable annoyances, as is often the case with gonorrhea of the urethra, and involvement of the cervix if both remain localized, or the situation is unusual and occurs with symptoms resembling other diseases, or else the original infection was of so mild a character as not to attract the marked attention of the patient at the time. Such is the case in the vast majority of gonorrheal infections which take place in the female. They are the result of old, or chronic, or supposedly cured, or supposedly harmless involvements of the prostate or seminal vesicles. Such gonococci have a tendency to form superficial involvement and there is nothing in the character of the infection to attract notice. In these mild cases the urethra is rarely involved for the simple reason that the infecting cocci are mixed with the seminal and prostatic secretion and are deposited in the vault of the vagina. There results finally a cervical catarrh. Extension is favored by rough intracervical manipulation, by curettage, by operation, by labor and by abortion. In an acute gonorrheal involvement, it is not easy after a certain period to find the gonococci extracellular or intracellular. In those milder cases it is extremely difficult to find them because of the mucoid character of the cervical discharge and because the cocci in the depths of the glands are not cast off in slumbering cases without stimulation or irritation. Were such conditions to be found in multiparæ alone, it would be difficult to form a definite opinion. Even here, the fact that a woman has borne several children does not exclude the existence of a cervical infection. Many women with a cervical gonorrhea which remains localized go through successive pregnancies. It is probable that an involvement of this mild nature which does not, postpartum, extend upward and involve the uterus, tubes and peritoneum after the first labor and which therefore permits of a second pregnancy, will, in all probability never extend further than the cervical lining and if it does so its course will be mild. When gonorrhea of the cervix and uterus becomes chronic, the discharge becomes less and then mucoid or mucopurulent and many squamous epithelial cells appear which may contain cocci. When this occurs, says Bumm, the prognosis is doubtful, for the cocci may disappear for weeks and then reappear. The only symptom is discharge which is mucoid and often yellow or green. The milder lesions referred to and which affect the cervix, the post-parametrium, the uterus, the peritoneum and the ovary are frequently found in women who have borne one child, but very frequently in women who are sterile. In the majority of such cases no other etiology than gonorrhea can be found. No etiology can be considered, except mild infection from below by the gonococcus from a dormant male prostatitis. I have come to this conclusion from a study of cases acutely infected by the gonococcus and in whom the gonococcus was clearly demonstrated. In the course of months and years, the original typical character of the inflammation changes to a type so often found on the first examination of long suffering patients. Therefore when such cases, particularly in nulliparæ, are seen for the first time and evidence the typical picture of erosions, of cervical catarrh, uterine catarrh, salpingitis, mild salpingo-oöphoritis, mild tubal adhesions and sterility, and if other causes can be excluded, the only conclusion to be reached is that we are dealing with subacute infection probably by a non-virulent type of gonococcus. Examination of the husband will disclose a prostatitis or show threads in the urine or divulge the history of a new infection after marriage.

Many observers will not grant that there is a difference in the virulence of gonococci. They say that when transplanted to new soil any gonococci may cause acute infection in favorable soil. Mild attacks, they say, are due to the resistance of individuals or to the element of localization.

Bumm says that the severity of the infection depends on the localization; that gonorrhea is light if located

in the cervix or urethra and severe if it extends upward quickly. Bumm says that it is often isolated in the cervix, while Wertheim says that it is in the uterus much more often than we think.

Making the analogy from our knowledge of other bacteria, we have the right to predicate various degrees of virulence in different gonococci. It is natural to expect that gonococci few in number and found with difficulty in the male prostate years after the original infection may cause a less acute involvement of the cervix, than the cocci from a fresh or recent gonorrhea in the male. While I have no warrant for this statement on the basis of experimental proof, I may quote the opinion of Döderlein that acute gonorrhea in the female comes from acute gonorrhea in the male and that subacute gonorrhea comes from a chronic subacute disease in the male. The subacute form has none of the symptoms of the acute form, often presenting only a discharge. With this statement I agree, on the basis of clinical facts and microscopic examination.

DISCUSSION

ON PAPERS OF DRS. BOLDT AND BANDLER.

DR. REUBEN PETERSON, Ann Arbor, Mich., emphasized the fact that whatever may be the cause of these inflammatory pelvic conditions, the practical point is the treatment. There are, he said, two varieties of gonorrheal infection of the female genital tract. One, perhaps the most uncommon, is subacute from the start, with very little pus in the tubes. After the disease has gone on for some time, the tubes and ovaries are bound down to the pelvis by extensive inflammatory adhesions. In the second class of cases—in his experience the less frequent of the two—there is a small or large collection of pus in the tubes or in the ovaries, or in both. The treatment of these cases has changed in the past ten years. Dr. Peterson here mentioned the good work done by Dr. Price and others of the bold operators who started the younger surgeons in abdominal surgery. In about 1891 he wrote to Dr. Price and asked his advice in regard to the treatment of a certain patient, a woman, who had had suppuration in the pelvis, with a discharge of pus into the rectum. He was advised by Dr. Price to open the abdomen and take out the pus tubes. He did so, and the patient got well. That, he said, was the practice in those days, to remove all pus tubes by way of the abdomen, and surgeons thought they were doing the right thing. As time went on, however, Dr. Peterson found that his mortality was much higher than was pleasant to contemplate, although he was operating more and more and acquiring more and more experience. He found that although he could operate successfully on a certain number of patients with purulent appendages (and fewer women out of a hundred died), yet a certain number succumbed. In 1896 a woman would not let Dr. Peterson take out her tubes. He made a wide incision through the vagina and evacuated the pus, but thought it bad surgery. Much to his surprise the woman got well, and as other women came to him he operated in the same way with a decided improvement in the mortality. Now it is very seldom that with a large collection of pus in the pelvis he attacks it through the abdominal route. Whether these pus tubes are high up or low down, he usually operates by way of the vagina and drains, with better results than he had when he went in by the abdominal route.

DR. JOSEPH TABOR JOHNSON, Washington, D. C., stated that there is abundant evidence to show that anywhere from 75 to 95 per cent. of abdominal operations are required on account of the infection by the gonococcus. There is no doubt, he said, that at least 50 per cent. of abdominal operations done throughout the world are done because of gonorrhea. It will be recalled also, he continued, that there are a large number of women all over the United States suffering from this disease; married women infected by husbands who thought and were told they were cured by their physicians who had ignorantly given the opinion that it was safe for them to marry. A very great amount of sterility is produced by this disease, when it is not considered sufficiently severe to require mutilating operations, on account of the effect of the gonrrheal infection on the mucous lining of the Fallopian tubes. In most of these cases the operations required result in sterility of the patients. A great proportion of sterility in the male is due to gonorrheal epididymitis, so that the great question of sterility comes back in at least 50 per cent. of the cases on the female side and 16 to 30 per cent. on the male side, to gonorrheal infection. An important part of the subject, Dr. Johnson said, is that of vulvovaginitis in little children. Those in charge of institutions are reporting more and more extensively the number of epidemics of this infection occurring in foundling hospitals. These cases are in a large percentage due to gonorrheal infection. Investigations have almost positively proved, in many cases, and inferred in others, that much of the dysmenorrhea and amenorrhea and sterility occurring in women later in life is due to the effect of gonorrheal infection during childhood, which has prevented the development of their pelvic organs.

DR. L. MCMURTRY, Louisville, Ky., thought that the remarks of Dr. Johnson would portray the far-reaching importance of this subject. Those familiar with the literature know that the admirable papers which Dr. Johnson has presented in the last few years have done much to impress the great body of the profession, who looked on this affection as simply one of the numerous gynecologic diseases, as a subject having a great many different bearings.

Dr. McMurtry is not in accord with the plan of treatment of these cases advocated by Dr. Peterson. The highest authorities in this country, he said, advocate the abdominal method of operating. To the French the gynecologic picture is altogether from the floor of the pelvis. A French gynecologist will close the abdomen suprapubically and open the pelvis from the vagina in order to complete the operation. Peterson, he thought, ought to readopt his old method, go back to the method which he thought was dangerous. In these cases of suppurative gonorrheal salpingitis and ovarian abscess, Dr. McMurtry knows of no operation from which the results are so satisfactory as abdominal section, separation of adhesions, with ofttimes the necessity for the removal of an infected appendix along with the tubes, and restoration to normal positions of organs. The operation of vaginal puncture and drainage is, in the majority of instances, an incomplete operation, and a large proportion of patients will require a suprapubic operation for their recovery, and those that do recover after vaginal incision and drainage happen to be a fortunate class, with the abscess enclosed in a sac, which never can be recognized beforehand. In a word, one never can tell beforehand just which of these cases may be curable by vaginal incision. In Dr. McMurtry's hospital service, which is limited almost entirely to the surgical treatment of such patients, the patients make splendid recoveries. In the Trendelenburg position the enucleation can be done safely, and Dr. McMurtry stated that he knows of no operation in the entire range of gynecologic surgery which is more satisfactory and more uniformly successful. He asserted that the very best results can be obtained from a suprapubic abdominal section in these cases.

DR. A. B. MILLER, Syracuse, N. Y., asked how much advancement has been made since 1879, when the subject was introduced by Noeggerath. It has been shown since then, first, that this disease is confined largely to the external organs of generation; second, that often it is in the cervical canal. Nothing is known as to when its existence will cease; it is capable of continuing for all time. Further, Dr. Miller asked, are any advances being made in the consideration of this subject? Ought not the profession instead of discussing the treatment of the surgical complications of the disease, direct its thoughts to the treatment of gonorrhea in its inception, and the lessening of its seriousness and frequency? Text-books say that antiseptic douches and washes should be used. Few physicians are treating their patients in that way; they are allowing them to go on and then treating the pathologic results. If the infection is confined to the vulva, is there any line of treatment that will arrest it at the portal? If there were

such a line of treatment, it would be possible to prevent the extension of the disease. Such a method, Dr. Miller said, would be the dry treatment. Although these parts can not be made absolutely dry, it is possible, by surgical means, if it is feared that the disease will extend to the cervix, to lessen its virulence. Suggestions were asked for.

DR. E. GARCEAU, Boston, Mass., considered the most important point in connection with the whole subject the question of treatment of pus tubes in the pelvis. Many methods have been tried, some with success and some without. The operation of vaginal hysterectomy, first performed by Pean of Paris, has now practically been abandoned. There is too much danger of wounding the bowel or injuring other important organs, and the operation may be followed by intestinal obstruction. Dr. Garceau thought that most surgeons would hesitate to perform an abdominal section in a case of serious pelvic suppuration, cases of extensive suppuration, when the woman is very ill, with rapid pulse, high fever, sweating, and in a generally bad condition. In these cases, he believes that a vaginal incision is a simple matter. It requires only a few minutes to do it, does not occasion great shock, and drainage is secured, usually in a most satisfactory manner. If further treatment is required, a later abdominal operation for removal of the tubes, at a time when there is no active inflammation, is attended with little risk.

DR. C. S. BACON, Chicago, emphasized the point made by Dr. Bandler that the diagnosis of gonorrhea by means of the microscope is very uncertain. This is a fact which he learned some years ago when he made a systematic examination of quite a series of cases of pregnant women, and discovered not only that it is frequently impossible to determine positively that the organism in the discharge is the gonococcus, but also that very often, where there was undoubted gonorrhea, no gonococcus was found at all. Much reliance is placed on the microscope, and rightly, but Dr. Bacon urged that other means of diagnosis be considered. His own experience has been that the treatment of gonorrhea of the vaginal tract from the uterus down is very unsatisfactory, if by the treatment is meant the permanent cure of the disease. He would not like to say in any case that the disease was cured, in the sense that it would not return. The condition seemed to be alleviated, and the patient left in a state of no special danger, unless there occurred some special incitement to a return of the disease. Dr. Bacon feels that the treatment is largely that of favoring Nature's cure. Nature cures these cases, if the patient can be left absolutely quiet. If the patient with acute gonorrhea is made to lie in bed the disease is soon under control. This treatment also applies to gonorrhea of the tubes. Dr. Bacon is positive that in puerperal gonorrhea the patient comes out the best if she is left absolutely quiet for weeks, until the large tubes have so contracted that practically nothing can be felt. This can be aided by the modern methods of conservative gynecology, as the hot-air treatment.

DR. L. H. BRANSON, Iowa City, Iowa, referred to a statement published in the British Medical Journal, May, 1907, that from 10 to 25 per cent., possibly more, of the cases of sterility in man are caused by gonorrhea, and that from 75 to 90 per cent. of cases of sterility in women are caused by gonorrhea. These figures, she said, speak for themselves, and impose on physicians the duty to act, if for no other reason than to remedy this, as guardians of the youth of the present and protectors of the future unborn. Of course, continued Dr. Branson, the most important part of the subject is the prevention and the cure of gonorrhea. One of the sequelæ of gonorrhea in women, which has made Dr. Branson think it an indicator in diagnosis, is stricture of the urethra. In many instances she has proven this to be the result of a previous attack of acute gonorrhea. This stricture may at times be the only symptom. There may be normal urine; there may be no hyperemia, no inflammation of the urethra, nothing but this one symptom of stricture. It may be general throughout the entire urethra, or it may be annular. These rings may occur singly or at several places along the urethra. Dr. Branson has therefore come to look on this stricture as a diagnostic feature of comparatively great value.

DR. JOSEPH PRICE, Philadelphia, stated that although it was said of Noeggerath's paper that a copy of it should be found in every Sunday School library of the land, he (Price) came very near being excommunicated from his profession by commending this paper. Now there are six or more societies, one with a membership of 600, for the prevention of the social evils, and Dr. Price claimed that every physician should be identified with one of them. Dr. Branson, he said, made one good point, in speaking of the prevention of the disease. Oliver Wendell Holmes, in answer to the inquiry of when a child's education should begin said one century before it is born. The great American people, morally, physically and intellectually, should be a stronger people than ever. The tendency is to retrograde, to be a weaker people morally, physically and intellectually with the influx of 40,000 perverts and degenerates from Europe. Dr. Price claimed that at the present time puerperal sepsis is more common than it has been for a number of years. There has been a laxity in the management of puerperal cases and maternity hospitals. In Pennsylvania the mortality has been appalling. In regard to the use of the curette, he said that in infections, the precise nature of which could not be determined, it has been common to use the curette. It has been difficult to save those patients. Some are operated on and saved and some are not operated on. Nor does the vaginal route give any aid. Those particular patients are not saved by the vaginal route nor by drainage. Dr. Price has seen many soldiers returned from tropical service marry the flower of the family. They have sought specialists and undergone the most thorough treatment and been given certificates of health. Subsequently he attended their wives when they had suppuration of tubes and ovaries. Dr. Price was quite certain that the former heroic measures gave better results than our present mild practices. He said also that what Dr. J. Tabor Johnson has written on this subject ought to be put into book form and distributed. The disease is terribly common and children should be instructed how to avoid it. Dr. Price said that the big abscesses Dr. Peterson spoke of are usually ovarian abscesses. In 10 per cent. of all tubo-ovarian abscesses on the right side there is involvement of the appendix. The appendix is removed at the same time, but generally there is an omental adhesion that must be dealt with and a coiled ileus and obstructions that must be relieved. The vaginal operation can be done easily and quickly and with splendid results. It is very curious, Dr. Price said, that one man may remove an abscess from above by the dry method with a low mortality, whereas if he uses the wet method he has a high mortality. Dr. Price prefers the wet toilet. He said he could wash out 100 abdomens and have 98 or 100 patients get well.

DR. REUBEN PETERSON, Ann Arbor, Mich., stated, in explanation, that he had to limit himself in the discussion, and chose the method of treating pus in the pelvis following gonorrheal inflammation. To the specialist, he said, it makes no difference whether he operates from above or below, except as he finds that his results are different. Personally, he does not consider it as satisfactory to operate from below, speaking from the standpoint of so-called clean pelvic surgery. It is much cleaner to operate from above, opening the abdomen, removing the tubes, severing adhesions, removing the appendix, etc. The point, however, is that in these cases of pelvic suppuration one can save more lives by first making a large incision through the vagina and then draining. There is practically no shock from such an operation. After a while the woman recovers from her sepsis, and then, if it becomes necessary, the appendages can be removed with comparative safety.

DR. A. H. GOELET, New York City, said that it is only too true that the examiner is responsible for the continuance of this disease. He could mention innumerable instances in illustration. Some, he said, may regard the conclusions of Dr. Bandler as rather extreme. He decidedly agrees with Dr. Bandler. One thing which has enabled Dr. Goelet to make the diagnosis of these conditions comparatively easy is the application of electricity to the cervical canal. Twenty-four or forty-eight hours afterward he can detect bacteria that he did not know were in the discharge.

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DR. PHILANDER A. HARRIS, Paterson, N. J., suggested that the use of the curette ought to be limited by some very particular privilege granted by a board of examiners. It is too easy for the curette to be used. Dr. Harris endorsed what Dr. Peterson said regarding the indication for discharging considerable quantities of pus from the pelvis by the vaginal route. It is the very safest way, oftentimes of affording relief, and in one case out of five a permanent cure is thereby effected. Dr. Harris said he referred, of course, to treatment employed in the acute inflammatory stages of the disease when it would seem unsafe to go above and do what Dr. Price advised. He believes that there are cases in which one will do much better by operating through the vagina. He agreed with Dr. Bandler that there are a great many cases of unrecognized gonorrhea in the female. It will crop out every now and then. Another point, he said, not mentioned particularly by recent writers, is the production not exactly of sterility, but of a condition which favors pregnancy in the tubes.

DR. DANIEL H. CRAIG, Boston, Mass., stated that he knows of no field of gynecologic science in which so much is taken for granted as in the percentages variously offered of the frequency of gonorrhea in women. The ground is taken, he said, when we can not find another cause for erosions of the cervix, that the condition is probably gonorrheal. If surgeons are going to take that view, Dr. Craig thinks it only fair that in an equal number of cases they should take the ground that it is improbable that the case is one of gonorrhea. That view he accentuated in his work on endotrachelitis. In approximately 100 cases of endotrachelitis, all of which were treated by Dr. Craig's method, he had careful examinations of the scrapings made, and the question of diagnostic origin was gone into carefully. He was much surprised to find the infrequency with which he could demonstrate a bacterial origin in the cases which have been so long classed as probably gonorrheal. Repeated examinations failed to demonstrate the gonorrheal origin. Therefore, there is ground for the supposition that a great deal of what is passed as gonorrhea may not be gonorrhea at all. Dr. Craig feels that it never will be possible to give any accurate statistics of the frequency of gonorrhea in women. As to the infiltration behind the cervix which Dr. Bandler found to disappear after the cure of the endotrachelitis (in a way which would be impossible for inflammation of organized type to disappear), Dr. Craig thought that the prompt disappearance of all thickening behind the cervix is due to the relaxation of the uterosacral bands.

DR. THOMAS S. CULLEN, Baltimore, Md., some years ago carefully examined all scrapings and also the endometrium in every case in which the uterus had been removed, and in the course of four years found 48 cases of endometritis. In other words, he had only one case of endometritis every month during the four years in the large gynecologic service of the Johns Hopkins Hospital. In many cases of pus tubes he was much surprised to see that there was a perfectly normal endometrium. The endometrium of both the cervix and body had evidently been inflamed at one time, but on account of excellent drainage, due to the position of the uterus, had regained its normal state. The tubes, on the other hand, when once occluded, kept on accumulating the secretion of the cells, and dropped lower and lower, thus excluding absolutely any possibility of natural drainage. With regard to the examination of these cases for gonorrhea, Dr. Cullen said he is rarely able to demonstrate the gonococci except in very early cases, and in his experience the early cases have not been referred to him. Operative interference, in his opinion, whether done above or below, depends on the individual case. He felt that in many cases where we have been prone to ascribe the infection to gonorrhea, the primary cause has not been the gonococcus, but an acute appendicitis with secondary involvement of the tubes and ovaries.

DR. SWITHIN CHANDLER, Philadelphia, some time ago began to examine the cervix in gonorrhea, and in many cases found the gonococci. If not examined early, as Dr. Cullen stated, they most probably will not be found, but when Dr. Chandler secured a sufficiently recent case, he did find the gonococci in the glandular tissue, and if he destroyed the gonococci at that time there was, in the great majority of cases, no extension whatsoever up into the tubes. In some chronic cases also he found the gonococci. The method of treatment employed was the injection of pure lactic acid directly beneath the mucous membrane. If this is done carefully it does not cause a slough. No gonococci were found in the scrapings of the uteri. Chandler believes that in many cases in which dilatation and curettage are done a tract is opened (especially cervical), and gonococci are allowed to infiltrate and infect the deeper tissues, thereby spreading the infection.

DR. H. J. BOLDT, New York City, was confident that the gentlemen who discussed the method, meant to say that in all acute cases, where there is an acute inflammatory condition of the pelvis with pus, that to do an abdominal section would cause a rate of mortality entirely unjustifiable; but, that in that class of cases in which there is an accumulation of pus, and the Fallopian tubes are distended with pus, and because of their weight gravitate to the floor of the pelvis, it is better to incise and drain and thus give the patient an opportunity to recover from the inflammatory condition. After that, time will tell whether it is necessary to resort to further surgical intervention. It is impossible to say that by draining such tubes the patient will be cured. In a large number of cases, however, those patients will become cured spontaneously, so far as symptoms are concerned. Regarding the question of gonorrheal infection, Dr. Boldt said that if the case is acute, the diagnosis is not difficult, but it is difficult in some of the chronic cases. Dr. Cullen's results, so far as the examination of the endometrium is concerned, practically correspond with his observations, but that does not answer the question. What he is trying to ascertain is—taking it for granted that there is an infection and that disease has extended to the cervical canal, and if one can so far demonstrate the presence of gonococci in the cervical canal, with, possibly, involvement of the endometrium—can the infection of the Fallopian tubes in that class of cases be prevented by treatment of the intrauterine mucosa? Dr. Boldt's observation has been that patients so treated are not so liable to have infection of the adnexa. In a large number of patients infected with gonorrhea there will subsequently be tubal infection, and if such patients become pregnant, they often have ectopic gestation. Therefore the proper method of treatment of cases of endocervicitis should be determined, whether or not to limit the treatment to the cervix, or attack the endometrium at once, provided the adnexa are not affected.

DR. S. W. BANDLER, New York City, thought that the gonorrhea which causes salpingitis and no pyosalpinx represents a milder form of infection, due either to immunity on the part of the infected individual or to inherent resistance, or else it is due to the fact that the gonococci at the time of infection are not virulent. If such infections extend into the tube, there results a mild salpingitis which causes sterility. Some of these cases have adhesions about the ends of the tubes. Can it be proved that these cases are gonorrheal or are they due to some other cause? Dr. Bandler has come to the conclusion that a great many of these conditions are due to gonococci, even if there are none of the usual corroborative evidences present, such as urethritis, changes in the excretory ducts of the glands of Bartholin, no history of acute infection. The fact that Dr. Craig finds nothing in his examination of the scrapings, he said, proves nothing. It is nulliparæ who have endocervicitis who are subject to this condition of sterility and salpingitis. A woman who has had one child and who has this same condition does not ask why it is that she is secondarily sterile. If a woman has no baby at all, then she comes because of the primary sterility. These are the cases in which it must be determined whether the infection is due to streptococci, staphylococci, bacterium coli or to gonococci. In one clinic in which hundreds of women come with a history of having had a number of children, Dr. Bandler almost never finds erosions in these patients, almost never a characteristic cervical discharge. In another clinic, however, five out of ten of the women are sterile, and in these cases there are present the very discharges of which he spoke. The cocci which cause these cervical changes are the elements which cause the tubal

changes resulting in sterility. He has examined different slides from some of these patients for days and days before he found the gonococci, and he finds them in one-third of the cases. Dr. Bandler was emphatic in saying that the microscope should always be used, but if gonococci are not found under the microscope, the gonorrhea must not be excluded as the cause of the trouble. Personally, Dr. Bandler uses the word endometritis only for inflammatory conditions. Not every woman who menstruates too many days has endometritis. The majority of such cases are due to hyperplasia of the endometrium and to fibrosis of the uteri.

SPEECH RESULTS OF CLEFT PALATE OPERATION.*

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In consideration of what one may safely promise those who contemplate surgical operation for the closure of cleft palates, and more or less complete correction of the defects from which such persons suffer, there are many elements that must be taken into account.

First.—Above and beyond all else is the individual feeling on the part of the afflicted ones, which no normal person can fully comprehend, that their palates are whole, that they are as their fellows.

None can know what this means save those who have reached sufficient age to suffer the scoffs and jibes of school children, the heart-trying struggle to keep up in school or college with the handicap of imperfect speech, or the bitterness of social ostracism even though largely self-inflicted through supersensitiveness, and the untold trials of wage earning in competition with the anatomically perfect, though often less gifted mentally.

Second.—More healthful conditions of nose and pharynx, which means in greater or less degree better general health, and particularly protection against deafness due to middle-ear disease that so commonly results from unusual Eustachian exposure through open palate fissures.

Third.—No plates, obturators, or any sort of mechanical appliance could give either of the two foregoing benefits.

Fourth.—There is the infinite satisfaction of knowing that throughout life continued speech improvement is possible and that whatever may be accomplished in this direction is permanent. It is not subject to the uncertainties of accidental loss or breakage or change in perfection of adjustment through absorption or growth of surrounding structures, with attendant difficulties of reconstruction, neither is it subject to the necessity of again becoming accustomed to a new or altered appliance; all of these possibilities must, in the natural course, be expected with artificial appliances, to say nothing of the uncleanliness of natural tissue as compared with uncleanliness of plates under these conditions.

Fifth.—Some degree of immediate improvement in speech, for almost invariably speech becomes easier and is effected with less effort, but, beyond this, progress is dependent on a number of modifying factors. These are the subject of our special consideration at this time.

CONCLUSION FROM PHONOGRAPHIC SPEECH RECORDS.

Phonographic records that I have taken from patients before operation in all the different degrees of palate fissure have demonstrated some curious facts. Chief among these, in point of interest, is evidence that sometimes an individual with only a bifid uvula will speak more imperfectly and with greater exaggeration of the nasal and other defective sounds common to persons with cleft palates than others whose fissures are of much greater degree. In fact, some with complete fissure through both hard and soft palates are able to speak more clearly than those almost imperceptibly defective ones.

Many individuals with practically no palate at all sing well, even though unable to speak words with sufficient correctness to be understood.

CONDITIONS WHICH GOVERN SPEECH PROGRESS AFTER OPERATION.

Postoperative results show that, although there is always more or less noticeable defect present in speech, some patients gain marked improvement almost immediately, and this with comparatively little conscious effort or speech training. In other cases, voice change for the better is exceedingly slow and can be acquired only after long and patient effort. In considering the different factors that must necessarily play a part in this condition of results, I desire to call attention as of primary importance to one element of purely etiologic character.

THE INFLUENCE OF ETIOLOGIC FACTORS.

It is my custom, wherever practicable, to trace the family history of each patient through at least three generations. In approximately 10 per cent. there appears to be a history of direct heredity in the family on one side or the other in which there have been persons affected by either harelip or cleft palate or both. The number in which maternal impressions play a part is so small as to be of little significance. Many of the stories told by mothers and relatives of shock, fright or other maternal impressions during pregnancy when investigated show that the incidents occurred too late to make such a factor of etiologic importance. Careful study of these family histories, however, almost invariably reveals the fact that relatives have been subject to mental peculiarities, nervous affections, diseases of the heart, aneurism, tuberculosis, cancer or paralysis. These and other affections occurring with astonishing regularity, one naturally finds comparatively little difficulty, therefore, in tracing on either the paternal or maternal side, and sometimes both, those evidences of unstable nervous system and irregular or insufficient bodily or mental development which make arrest of development during the embryonic period easily accounted for.

The bearing of this on my subject, however, is made apparent chiefly by an important fact which I have been unable to find attention previously called to by other writers. It has been so frequently met with in my own dealing with these cases as to warrant mention and is, in my opinion, one worthy of considerable thought.

Not by any means invariably, but frequently, I have noticed that either the father or the mother of a cleft-palate patient has some peculiarity of speech. In none of these cases has the peculiarity been noticed or associated in any way with cleft palate, and, though I have been unable to examine all cases, it is fair to assume that in the outward appearance of the palate there was no defect. Nevertheless, careful attention has demonstrated the fact that there was unquestionably a tendency to nasal or imperfect speech such as are more

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markedly noticeable with cleft-palate patients. It would seem, then, that there must be in these individuals either a nervous inefficiency in the speech mechanism or a slight imperfection of anatomic development, either of which in the next generation has become exaggerated into complete fissure and consequent speech difficulty.

CLINICAL CASE IN ILLUSTRATION.

That this is possible is demonstrated in a general way by many persons whose palates are only slightly imperfect in having a bifid uvula, both velum and hard palate being complete. More specifically it is proven by the case of a little girl about 6 or 7 years old who had apparently a perfect palate throughout and a normally developed uvula. Her speech was practically the same as many patients that have come under my care with fissures through hard and soft palates, and the exceedingly careful training that she had received had been insufficient to overcome this difficulty. On my first examination of her, I was able to discover no abnormal condition of development, but a more careful later study revealed the fact that the posterior border of the soft palate, although covered with tissue in a normal way, was insufficiently developed. At its central portion it was shaped the same as commonly occurs where there is cleft of the soft palate extending for a short distance into the hard palate. Thus we see that this tendency to arrested development which apparently had been overcome by later developmental processes was, nevertheless, sufficient to alter muscular adjustment and prevent the normal physiologic action of the velum palati in speech.

SIGNIFICANCE OF CORRECTIVE INFLUENCES IN EMBRYO.

That Nature does repair both harelip and cleft palate in embryo is frequently demonstrated by individuals who have a mark extending the full length of the lip with notch at the labial border, such lips having the appearance of having been imperfectly operated on in early infancy, although no such operation had been performed, because the lip was in this condition at birth.

The full significance of these indications of tendency to embryonic irregularity are certainly worthy of greater study in the solution of these problems than thus far has been given.

SPEECH DEFECTS DIRECTLY DUE TO POSTOPERATIVE IMPERFECTIONS.

Observation of patients after operation and particularly those in which, on account of imperfect operative methods, there has been little or no improvement, speech progress under training being slow, leads to the following conclusions in explanation of these difficulties in many instances:

Ill-Advised Operations in Early Infancy.—Where forcible means have been employed in early infancy to bring the sides of the fissure into direct or too close approximation, the arrested development of the maxillary bones makes the anterior portion of the mouth too small for accommodation of the tongue in the utterance of word sounds. This disadvantage is increased by the fact that, on account of early derangement of the developing teeth through forcible compression of the parts, not only are the incisors, cuspids and bicuspids erupted in such position as to reduce the size of the dental arch, but frequently one or more teeth erupt almost in the central portion of the palate.

Under these conditions, words beginning with c, d, g, h, j, k, l, n, r, s, t, x, z, all of which the tongue utters principally behind the teeth, and with little or no assistance from the lips, are exceedingly difficult, if not practically impossible, to speak correctly.

Disarrangement of the anterior teeth, since the teeth are more or less involved in pronunciation of all letters, widens the range of defective sounds materially. Where any portion of the protruding premaxillary has been removed for the purpose of facilitating lip closure in infancy, the non-eruption of teeth in this region is also a serious disadvantage and one that by all means should be avoided.

Scars that stiffen and distort the lip and which are so commonly noticeable on account of improper operative treatment in infancy affect all words beginning with b, f, m, p, v, w.

Mal-Developed Nasal and Other Parts Accessory to Speech.—Imperfection from wrong methods of early treatment, as noses that have the characteristic appearance of leaning to one side, with the cartilaginous wing more or less flattened, usually have deflection of the septum with tendency to unequal development, amounting to partial stenosis on one or both sides. One naris may be unusually large, with corresponding enlargement of the turbinal bodies. Hypertrophy of the nasal mucous membrane and other pathologic conditions that are in natural sequence to these conditions tend to nasal speech sounds even in persons otherwise normal, and obviously are more disadvantageous when other speech difficulties incident to cleft-palate speech habits act as a still greater complication.

Hard Palate Too Short and Too Flexible.—Shortening of the hard palate in its antero-posterior measurement often occurs from wrong operative methods. Failure to develop cartilaginous or bony tissue of sufficient firmness to act as a sounding board or to give the degree of resistance required for proper muscular action from points of attachment thereto is another result due to operative errors. This is a matter of much importance, since physiologic action of the muscles of the soft palate depends on the outline and character of the posterior border of the hard palate. Methods of operation by which the periosteum is carried over accurately and with as little injury as possible to be united in the central palatal line are advisable because they favor formation of bone. Conversely, methods by which flaps are turned over and the relation of the periosteal and mucous membrane surfaces are altered, while they may be successful in closing the palate fissure, are ill-advised, because a membranous yielding tissue covering the region of the hard palate can not give as good speech results as one more firmly resistant.

Velum Insufficient Through Abnormal Hard Palate Borders, Scars, Etc.—On account of ill-formed hard palate at the posterior border or because of its own insufficiency, the velum palati, after being closed by operation, is sometimes too short. It may be drawn too tightly or stiffened by scars in such a manner as to prevent it approaching the pharyngeal wall or meeting the base of the tongue with sufficient readiness to properly perform its speech function in governing escape of air through nose and mouth in sound making.

POSSIBILITIES OF IMPROVEMENT OF THESE CASES.

A study of the principal difficulties that stand in the way of speech improvement for those who have had cleft palates closed by operative means leads naturally to the query, Can something more be done for their benefit? This I am glad to answer in the affirmative.

Along two distinct lines lie methods by means of which almost incalculable assistance may be given such patients, and these are: First, improved operative methods; second, better speech training.

The lesson to be read from the results of imperfect or ill-advised treatment is that exceedingly great care should be exercised in order that no unnecessary violation of natural processes of development in early infancy or later developmental periods should be done. We are also taught that through operative means much may be accomplished by reconstruction, readjustment and improvement of the malformed parts by surgical operation.

In a large class of cases there is no development of the dental arch anterior to the cuspid teeth. If the incisors are erupted at all, they are in such form as to be of little practical assistance in restoring the contour of the face and giving necessary labial support as well as speech assistance in the utterance of dental sounds.

Reconstruction of Deformed Lips.—The lip often is too long, or on account of scar contraction on the inside has a tendency to curve inward instead of the natural outward roll. Sometimes the lip is too short or distorted through wrong muscular attachment. These and other lip deformities can be much improved and the lip made more useful for labial speech office.

CORRECTION OF DEFORMITY OF THE DENTAL ARCH.

There is also in those cases a frequent necessity of restoring the dental arch to its natural form and relation to both the lips and occlusion with the lower jaw. The simplest, most direct and satisfactory means of accomplishing this is by the insertion of teeth arranged in proper form and attached to teeth in the jaw.

The next class of intraoral deformity cases comprises those in which the teeth are erupted, but in malposition with the dental arches. The arch may be expanded and the teeth placed in proper relation so that the tongue may have sufficient room to give proper speech assistance, while both buccal and labial tissues are held in better form. This operation should only be attempted with great care and due appreciation of control of pressure so that no separation of the line of palate union may occur and an unfortunate reopening of the palate be brought about. Methods as usually employed in correction of dental irregularities must be avoided or carefully modified.

The results of the foregoing methods have been very gratifying to me in a large number of cases. In one case recently, the velum after closure was less flexible than seemed desirable. This was due to the fact that the patient was 30 years old before I performed the operation, and, though no scar stiffening interfered with movement, the tissue was so scant through want of development as to give this result. I reoperated by making an incision on each side and carrying tension sutures of wire through from one side to the other without interfering with the central portion of the palate at all, allowing granulation to fill the division in the tissue thus made, and in that way gaining additional freedom for the soft palate.

The speech results in this case, although the operation has been performed within the last few months, are such as to promise exceedingly good results.

CORRECTION OF DEFECTS BY OPERATIVE ASSISTANCE.

The question of reoperation in the region of the hard palate where tissue covering fissure has remained too flexible is one that requires great consideration for fear of doing injury to what has already been accomplished in the matter of closure of the fissure with tissue. Under favorable conditions, however, the mucoperiosteal flaps can be separated from the bone surfaces and carried to the center as for the original palate operation, thus gaining an increase of the surface which best promises cartilage or bony development. When I have done this operation, it has usually been coincident with an operation demanded for some other purpose, but the results are such as to convince me that there is hope for future improvement of many otherwise comparatively hopeless cases.

SIMPLE METHODS OF SPEECH TRAINING BEST.

In the matter of speech training, my plea is for greater simplicity of method. In the first place, due recognition must be given to all of those factors incident to individual adaptability and talent. These I have called attention to in my earlier description of conclusions drawn from phonographic records of these patients which mark the tendency in this as in any other education to slow or to rapid progress.

After an experience of several years during which I have devoted myself specially to the work of this character, and thus have had unusual opportunity to observe the results of speech training under widely different conditions, I feel called at this time to urge most strongly the avoidance of all methods of instruction that are unnecessarily technical or complicated. However alluring these may be from the theoretic standpoint of more or less limited observation of some views of this many-sided question, I am convinced that the easier and more naturally the directions which are given to such persons may be followed, the earlier improvement will be noticed.

As an example of this, I cite the cases of two boys, each about 14 years of age. Each had had his palate closed in infancy and each suffered in almost the same degree from contraction and ill-development of both hard and soft palates, with eruption of the teeth well in toward the central portion of the palate. With each I used successfully the same method of correction by gradual expansion and reshaping of the palates and dental arches. One of these had had constant instruction from his earliest days, not only in efforts to pronounce English words, but had also been taught French, with a view to assisting improvement, the learning of foreign languages for such patients being one of the accepted forms of favoring speech development.

The other little patient had had practically no training at all. His parents wisely considered that unless the anatomic defects from which he suffered could be corrected it were better that he be saved the trial of comparatively useless effort to improve. As might be expected, the boy who had been taught French, being unable to make English sounds correctly, was unable to do much better in French. Therefore, he had acquired wrong speech habits in two languages instead of one. This is a point that should be remembered by others who may wish to undertake this means of improvement.

The wonderfully complicated studies of consonant sounds on which he had spent many hours that could have been more beneficially employed out of doors only tended to confuse his mind and lessen the quickness of response of the many elements of speech mechanism. The difference was markedly apparent through the fact that the boy who had had no previous training made rapid progress toward improvement as soon as conditions

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were more favorable, whereas the one of much training, though equal in general intelligence, was found to be exceedingly slow in this respect, effort toward improvement being difficult.

I am indebted to Professor Carberry of the Wisconsin Conservatory of Music for the following suggestion, which has proven to be exceedingly useful in the management of these cases. As vocal instructor he is accustomed to teach that the Italian a (ä) is the basal tone, modification of which with but slight alteration of physiologic action allows sufficient change to utter clearly each of the other vowels, and even the consonants. With the organs in position to make this tone at the beginning of the sound, all parts are under the least possible strain, therefore the resultant sound effect will be most natural. For this reason it can be carried on up through the various registers of the voice to higher notes without sacrificing purity, as must necessarily be the case if there is the least strain on the voice or the sound-producing mechanism connected therewith at the moment of inception.

Applying this to the speech training of these individuals, I find that much of the confusing and complicated systems which involve special direction of the attention of the patient to lips and tongue as involved in speaking each particular letter of the alphabet are unnecessary. Not only are they unnecessary, but in some instances at least are most unadvisable, for over-anxiety causes undue nervousness and a tendency to unconscious contraction of all muscles. The added difficulties of other speech defects induced by nervous conditions that so commonly affect these patients make it evident that the simpler the form of training the more easily and rapidly speech improvement will take place. The easiest and the most natural way to overcome these unfortunate speech habits seems to be the use of the voice in singing. Detailed methods of instruction in these cases will be given in a future article.

SUMMARY.

No individual with cleft palate, no matter how bad the condition, need be utterly discouraged.

In nearly every case operation for closure of palate fissure should be performed, and at almost any age (one of my unexpected satisfactory patients just discharged from the hospital was 50 years old at time of operation).

No unnecessarily forcible methods should be employed in early infancy.

Defects of lip, nose and palate due to imperfect operative results, which are frequent causes of slow progress, may be much benefited by corrective operation.

Avoid complicated methods of speech training.

DISCUSSION.

DR. ROBERT T. OLIVER, West Point, N. Y., agreed with the author in doing the operation for correction of speech, whether from clefts of hard or soft palate, or both, at any age. From personal observation he does not believe in the theory of the early infancy operation being the only one that proves of value in the production of a speaking voice. He has seen several patients from 25 to 41 years of age who regained voice and speech control. While it is true, he said, that the bones are fully developed in these cases and the periosteal flaps, however nicely joined at the median line, will be slow in the production of osteoblasts and the regeneration of osseous tissue; yet there are some distinct advantages in these late operations, one being the individual's intelligence and eager willingness to assist in carrying out methods prescribed in teaching him to develop and use his new found speaking voice.

DR. E. A. BOGUE, New York City, had an opportunity to examine some of Dr. Brown's patients without his knowledge, and found the results to surpass anything he had anticipated. He does not believe that the limit is reached when we must say there is no hope; there is no help.

DR. V. A. LATHAM, Chicago, referred to one patient operated on by eastern men, in England and Ireland, who sent her over to America to the best operators. Every attempt was a failure. The patient was over 50 years. Dr. Brown operated on the woman with Dr. Latham and got a good result. There was no tissue to work on. The velum was drawn up and distorted. It had been fixed in a former operation in the middle of the palate. There was loss of speech. The doctor restored this and the patient has gained in weight and is happy. Every time she took a mouthful of water or food it came out through the nose. The sepsis, intoxication and poisoning from the nose and fauces was very bad. She was troubled with her ears and speech all the time. After the operation there was no trouble whatever. Her speech has been much improved, and she no longer wears the artificial velum.

DR. G. V. I. BROWN, Milwaukee, Wis., stated that he does not advocate putting off the operation until advanced age, because he believes in operating as soon as it is possible to do so without endangering the life of the infant. He commended Dr. Schamberg's work with the Roentgen ray.

THE ANTIMICROBIC ACTION OF BROMIN.*

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CHICAGO.

PREFACE.

The marked potency of iodin as a germicide in a comparatively weak solution as shown experimentally by myself[1] and clinically by Prof. N. Senn, for several years both previous and subsequent to these experiments, raised the question whether another member of the halogen group would prove of equal or superior value, considered from the same standpoint. For the purpose of determining this question Dr. Senn requested that bromin be made the subject of a similarly conducted research. A review of the more common antiseptics has been incorporated in my previous article and will, therefore, be omitted here.

EXPERIMENTAL TECHNIC.

(*A*) *Method of Preparation of Bromin Solution.*—An aqueous solution of bromin was employed, using as the mother solution one equal to 1 per cent. Since bromin is a heavy liquid, this solution was made by volume after the following formula:

Bromin	5 c.c.
Distilled water	495 c.c.

In order to get this amount of bromin in solution it became necessary to add the water to the bromin in small quantities and to shake thoroughly in glass container, then pour off into another container and add more water, repeating the process until the designated amount of water was used. On account of the intensely irritating effect of bromin fumes on the eye and throat, the preparation of solution should be carried on under a hood. The solution being volatile and corroding, must be kept in retainer with glass cork in order to preserve its strength.

* Because of lack of space a large portion of this article, including many of the tables giving details of the experiments, are omitted from THE JOURNAL. The complete article appears in the author's reprints.

1. THE JOURNAL A. M. A., Aug. 26 and Sept. 2, 1905.

From the 1/100 solution, strengths of 1/200, 1/300, 1/500 and 1/1000 were made by aqueous dilution.

Aseplicity of Solutions.—These solutions were now tested as to their sterility, the plate method being employed. Five drops of solution were used to inoculate a melted agar tube from which a plate was made. Three plates were made from each strength solution. These were incubated six days, at the end of which time no colonies had appeared, thus proving the solution to be sterile. This was further confirmed by inoculations from the different strengths on 6 per cent. glycerin potato. After six days of incubating no growths had appeared, hence they were sterile.

(*B*) *Micro-organisms Employed.*—The micro-organisms employed were of a comprehensive range, including bacilli, with and without spores, pathogenic and non-pathogenic, cocci, and fungi. This gave a great enough variety for the solutions to act on, thus permitting reliable deductions to be made of their anti-microbic value.

The micro-organisms were: (1) *Bacillus prodigiosus;* (2) *Bacillus anthracis* and spores; (3) *Bacillus tuberculosis;* (4) *Staphylococcus pyogenes aureus;* (5) *Streptococcus pyogenes;* (6) *Blastomyces dermatidis;* (7) *Actinomyces bovis.*

(*C*) *Method Used in Conducting Experiments.*—These were conducted with the micro-organisms *in vitro,* a large number of tubes being used. In order to approach as nearly as possible to the condition an antiseptic would have to meet when used to combat an infection in the tissues, solid media were employed exclusively. Before beginning the experiment the growths on them were allowed to become extensive, both in area and in thickness, the latter permitting the penetrating power of the solution to be tested. On these various growths in the test tubes the bromin solutions were deposited by means of a sterilized pipette until the surface of the growth was entirely covered. Then, after varying periods of time, which are designated in the tables, loops of growth, thus acted on by solution, were transferred to the tubes of sterile media and well inoculated. These tubes were next put in the incubator and watched for growth. No attempt was made to wash the inherent bromin solution from the loops on account of the danger of washing away the bacteria.

For each time of exposure three tubes were used, each being covered by a control tube made from the culture immediately before it was acted on by solution. In every case the bacterial growths transferred were macroscopic in size. This method seemed to offer the least possibility of error—one which would undervalue rather than overvalue the anti-microbic power of the solution.

KEY TO TABLES.

A, B, C = Tubes to which bacteria, acted on by bromin solution, were transferred.

A', B', C' = Control tubes, inoculated with original healthy bacteria.

The figures indicate the extent of growth. They are based on the unit of 1 as the denominator of growth. This 1, purely arbitrary and used for the sake of comparison, means a transverse growth from line of about ⅛ of an inch.

GROUP 1.—ACTION OF SOLUTIONS ON BACILLUS ANTHRACIS PLUS SPORES (FIVE-DAY-OLD CULTURES).

TABLE 1.—BROMIN 1-1000. EXP. 15 MIN.

Day.	A	A'	B	B'	C	C'
1	4.	3.1	3.8	4.	4.	3.8
2	4.6	4.3	5.1	5.2	5.2	5.1
3	5.3	4.9	5.4	5.3	5.4	5.3
4	5.7	5.2	5.6	5.5	5.8	5.7
5	5.8	5.7	5.8	5.7	6.	5.8
6	5.9	5.8	5.9	5.8	6.	5.9
7	6.	5.9	6.	5.9	6.1	6.

TABLE 2.—BROMIN 1-1000. EXP. 30 MIN.

Day.	A	A'	B	B'	C	C'
1	4.	3.2	3.7	3.9	4.1	4.
2	5.1	4.4	4.7	5.	5.3	4.9
3	5.4	5.1	4.9	5.3	5.7	5.3
4	5.5	5.2	5.1	5.5	5.9	5.8
5	5.9	5.8	5.3	5.7	6.	5.9
6	6.	5.9	5.4	5.8	6.	6.
7	6.2	6.	5.4	5.9	6.1	6.1

TABLE 3.—BROMIN 1-1000. EXP. 60 MIN.

Day.	A	A'	B	B'	C	C'
1	3.4	3.8	3.9	3.8	3.9	1
2	5.	3.9	5.2	5.2	5.1	5.2
3	5.3	4.9	5.4	5.3	5.3	5.4
4	5.7	5.3	5.5	5.6	5.6	5.8
5	5.9	5.7	5.7	5.7	5.7	5.9
6	6.	5.8	5.8	5.8	5.8	6.
7	6.	5.9	5.9	5.9	5.9	6.

TABLE 4.—BROMIN 1-500. EXP. 15 MIN.

Day.	A	A'	B	B'	C	C'
1	2.	2.	2.5	3.3	3.2	3.1
2	4.	3.5	4.1	4.1	4.5	4.
3	4.7	4.5	4.5	4.5	4.9	5.
4	5.3	5.2	5.6	5.5	5.5	5.5
5	5.7	5.5	5.8	5.8	5.8	5.8
6	5.8	5.6	6.	6.	5.9	5.9
7	6.	5.8	6.1	6.1	6.	6.

TABLE 5.—BROMIN 1-500. EXP. 30 MIN.

Day.	A	A'	B	B'	C	C'
1	.1	3.1	1.	3.4	0.	2.8
2	3.5	4.	3.9	4.4	3.2	3.9
3	4.1	4.3	4.2	4.9	4.1	4.7
4	5.3	5.3	5.1	5.5	5.	5.4
5	5.5	5.7	5.5	5.9	5.4	5.8
6	5.9	5.8	5.5	6.	5.8	6.
7	6.1	5.9	5.6	6.1	5.9	6.1

TABLE 6.—BROMIN 1-500. EXP. 60 MIN.

Day.	A	A'	B	B'	C	C'
1	0.	3.1	0.	3.3	0.	2.
2	1.5	4.	3.4	4.2	0.	2.8
3	3.	4.5	4.1	4.5	.1	3.4
4	4.1	5.1	4.8	5.1	.3	4.7
5	5.1	5.4	5.2	5.7	1.2	5.2
6	5.7	5.7	5.5	5.8	2.3	5.5
7	5.8	5.8	5.7	6.	3.2	6.

TABLE 7.—BROMIN 1-300. EXP. 15 MIN.

Day.	A	A'	B	B'	C	C'
1	0.	2.2	0.	2.2	0.	2.3
2	.1	3.4	.8	3.5	.3	3.6
3	.2	4.4	2.	5.7	.6	5.5
4	.2	5.2	4.	5.9	1.	5.8
5	.2	5.4	4.5	6.	2.	5.9
6	.2	5.7	5.4	6.1	3.4	6.
7	.2	5.9	5.7	6.2	3.5	6.1

TABLE 8.—BROMIN 1-300. EXP. 30 MIN.

Day.	A	A'	B	B'	C	C'
1	0.	2.3	0.	2.8	0.	2.2
2	?	2.8	3.	3.1	?	3.3
3	.01	3.4	4.5	4.5	.02	3.9
4	.01	3.9	5.1	5.3	.02	4.6
5	.01	4.5	5.5	5.7	.02	5.5
6	.01	4.9	5.8	5.9	.03	5.9
7	.01	5.7	6.1	6.2	.03	6.1

TABLE 9.—BROMIN 1-300. EXP. 60 MIN.

Day.	A	A'	B	B'	C	C'
1	0.	2.1	0.	3.	0.	2.8
2	?	2.9	.5	3.8	?	3.4
3	.1	3.5	2.4	4.5	.01	3.5
4	.2	4.2	4.3	4.7	.01	3.9
5	.2	4.9	4.5	5.3	.01	4.5
6	.2	5.4	4.9	5.9	.01	5.5
7	.3	5.8	5.8	6.1	.01	6.2

TABLE 10.—BROMIN 1-200. EXP. 15 MIN.

Day.	A	A'	B	B'	C	C'
1	0.	1.3	0.	2.	0.	1.2
2	.2	3.1	0.	4.1	.7	4.2
3	.5	3.9	.1	4.7	1.9	4.9
4	.8	4.2	.1	4.9	3.2	5.2
5	1.9	5.	.1	5.5	3.8	5.6
6	3.8	5.7	.1	6.	4.5	5.8
7	3.1	5.9	.2	6.2	5.4	6.

TABLE 11.—BROMIN 1-200. EXP. 30 MIN.

Day.	A	A'	B	B'	C	C'
1	0.	2.	0.	1.9	0.	2.2
2	0.	2.4	0.	2.9	.01	2.8
3	.3	3.	0.	3.2	.01	3.8
4	.5	3.9	.01	3.7	.02	4.2
5	1.4	4.5	.01	3.9	.02	4.9
6	3.1	5.5	.01	4.4	.02	5.6
7	4.8	6.	.01	5.7	.02	5.9

TABLE 12.—BROMIN 1-200. EXP. 60 MIN.

Day.	A	A'	B	B'	C	C'
1	0.	3.	0.	2.8	0.	2.9
2	0.	3.4	.3	3.1	0.	3.3
3	.03	3.9	1.2	3.6	0.	4.
4	.05	4.4	1.7	4.5	.01	4.6
5	.1	5.4	3.8	4.9	.01	5.2
6	.2	5.8	4.8	5.4	.01	5.7
7	.2	6.1	5.1	5.8	.01	5.9

TABLE 13.—BROMIN 1-100. EXP. 60 MIN.

Day.	A	A'	B	B'	C	C'
1	0.	2.9	0.	1.5	0.	2.1
2	0.	3.4	0.	3.	0.	4.1
3	0.	4.8	0.	3.8	0.	4.8
4	0.	5.4	0.	4.5	0.	5.3
5	0.	5.8	0.	5.	0.	5.7
6	0.	5.9	0.	5.4	0.	5.9
7	0.	6.2	0.	5.7	0.	6.2

TABLE 14.—BROMIN 1-100. EXP. 45 MIN.

Day.	A	A'	B	B'	C	C'
1	0.	1.6	0.	1.7	0.	2.1
2	0.	3.1	0.	3.5	0.	3.4
3	?	4.2	0.	5.1	0.	5.
4	.01	5.2	0.	5.8	0.	5.9
5	.03	5.8	0.	5.9	0.	6.
6	.03	6.	0.	6.	0.	6.1
7	.04	6.1	0.	6.	0.	6.2

TABLE 15.—BROMIN 1-100. EXP. 30 MIN.

Day.	A	A'	B	B'	C	C'
1	0.	3.	0.	2.4	0.	2.3
2	0.	3.5	0.	2.9	0.	3.1
3	0.	4.2	?	3.6	0.	4.
4	.01	4.9	.01	4.3	0.	4.5
5	.01	5.4	.01	4.8	0.	5.
6	.01	5.9	.01	5.2	0.	5.6
7	.02	6.1	.01	5.7	0.	6.1

TABLE 16.—BROMIN 1-100. EXP. 15 MIN.

Day.	A	A'	B	B'	C	C'
1	0.	3.	0.	2.4	0.	2.9
2	0.	3.7	0.	2.9	0.	3.7
3	?	4.	0.	3.7	?	4.6
4	.01	4.5	0.	4.7	.01	5.4
5	.01	5.2	0.	5.3	.01	5.7
6	.03	5.8	0.	5.8	.02	5.9
7	.04	6.1	0.	5.9	.02	6.2

Thus, in explanation, 2 equals twice the denominator, or ¼ inch; 3 equals three times denominator, or ⅜ inch, etc.

0 = No growth.

? = Slight growth, but not equal to 1/32 of an inch.

Day = Day of growth, figures designating days of growth. Thus, 1 means growth on first day, or 24 hours after inoculation; 2 means growth on second day, or 48 hours after inoculation, etc.

The strength of solution employed and the time of exposure to same are designated in each table.

ANTHRAX EXPERIMENTS.

The tables of Group 1 (on opposite page) show the results of the experiments with anthrax cultures.

CONSIDERATION OF EXPERIMENTAL EVIDENCE OF ANTHRAX.

1/1000 for *fifteen* minutes is negative in action.
1/1000 for *thirty* minutes is negative in action.
1/1000 for *sixty* minutes is negative in action.
1/500 for *fifteen* minutes is negative in action.
1/500 for *thirty* minutes shows an inhibitory effect.

The first day A gives 1/31 of control growth, B less than 1/3 control growth and C no growth. On the second day there is a very rapid increase in growths on A, B and C, their growths being but approximately .5 less than controls. On the third day the growths are relatively the same as on the second day. On the fourth day A equals control, B and C gain on controls. From the fifth to the seventh day, inclusive, A increases gradually, surpassing its control, while B and C, increasing more slowly, finish about .6 behind controls.

1/500 for *sixty* minutes shows a considerable inhibitory effect. On the first day there is no growth. On the second day C gives no growth, A equals ¾ control, B, growing rapidly, is only .8 behind control. On the third day, A and B have gained on their controls, while C shows a very small growth. From the fourth to the seventh day, inclusive, A increases progressively, equaling control on sixth and seventh days. B increases also, being .3 behind control on seventh day, C grows slowly and is equal to a little more than one-half control growth on seventh day.

1/300 for *fifteen* minutes shows a considerable inhibitory effect, irregular in character. On the first day there is no growth. On the second day, A and C show small fractional growths and B a larger fractional growth. On the third day A has increased but .1, now equaling .2. No more growth follows, and it is about 1/26 of control growth on seventh day. Likewise, on the third day B increases rapidly, being over 1/3 of control growth, while C increases fractionally. The fourth day shows a rapid growth on B and a slow one on C, the latter being about 1/6 control. From the fifth to the seventh days, inclusive, B and C increase gradually, equaling, respectively, on seventh day 11/12 and ½ controls.

1/300 for *thirty* minutes exhibits a considerable irregular inhibitory effect. The first day shows no growth. On the second day A and C show questionable growths and B practically equal control growth. The third day A gives a very minute fractional growth which does not increase on succeeding days, C gives minute fractional growth which increases very slightly on following days, while B equals control and does so from this point on.

1/300 for *sixty* minutes shows a considerable irregular inhibitory effect. The first day there is no growth. The second day A and C show questionable growths and B gives 1/7 of control growth. On the third day A shows a small fractional growth; B, a marked increase, being over ½ control growth; C, a very small fractional growth. From the fourth day on A barely increases a small fraction in growth, C does not increase at all, while B increases rapidly, almost equaling control on seventh day.

1/200 for *fifteen* minutes gives a medium irregular inhibitory effect. On the first day there is no growth. On the second day A equals 1/16 of control, B shows no growth, C equals 1/6 of control. On the third day A increases slightly, B gives a small faction of growth, C is over 1/3 of control. On the fourth day A increases slightly, equaling 1/5 of control, B remains the same and does not gain till seventh day, and then only .1, C increases, being over ½ control. From fifth day on A and C gain consistently, equaling, respectively, on seventh day about 3/5 and 11/12 of control growths.

1/200 for *thirty* minutes shows quite a considerable inhibitory effect, irregular in character. The first day there is no growth. The second day A and B remain free from growth, while C shows a very small fraction of growth. This fraction but doubles during the rest of the time. On the third day A gives a fractional growth, B no growth. The fourth day A increases fractionally and B shows a minute growth which does not increase on following days. From the fifth day on A increases rapidly, being 5/6 of control growth on seventh day.

1/200 for *sixty* minutes exhibits a considerable irregular inhibitory effect. The first day there is no growth. The second day A and C show no growth, while B gives a fractional one. On the third day A gives a minute fraction of growth, B increases rapidly, equaling 1/3 control growth, C no growth. On the fourth day A increases by a small fraction, B increases moderately, and C gives a very small fractional growth which does not increase on following days. From the fifth to seventh day, A grows a small fraction and B, increasing rapidly, almost equals control.

1/100 for *sixty* minutes shows no growth throughout.

1/100 for *forty-five* minutes is almost effective. B and C show no growth throughout. A remains free from growth till third day, when a questionable one appears. This increases by minute fractions of growth on succeeding days, being less than half a unit on seventh day.

1/100 for *thirty* minutes shows an extremely marked inhibitory effect. C shows no growth throughout. On the first and second days A and B are free from growth. On the third day A gives no growth, B a questionable one. On the fourth day A and B both give very small fractional growths, which in A increases but a small fraction on following days, while in B it remains stationary.

1/100 for *fifteen* minutes presents a very marked inhibitory effect. B gives no growth throughout. On the first and second days A and C are free from growth. On the third day both show questionable growths, which, on fourth and fifth days, develop into small fractional growths. On sixth and seventh days these increase a very small fraction.

SUMMARY OF EVIDENCE ON ANTHRAX BACILLI.

In summing up the effect of solutions on *Bacillus anthracis* plus spores we must consider: 1, The actual death point of micro-organism as expressed by the strength of solution employed and the time of exposure to same; 2, the inhibitory effect of solution on the growth of micro-organism, depending also on the strength of solution employed and time of exposure to same, which is shown before the death point is reached.

Considering, therefore, the first division, the evidence shows that in order to produce the death of *Bacillus anthracis* plus spores a 1/100 bromin solution must act for sixty minutes. The inhibitory effect, or the second consideration, first shows itself after an exposure of the organism to a 1/500 solution for thirty minutes. It is well marked for the first day and then disappears. A sixty minute exposure increases inhibition, being especially marked during the first two days, being very irregular in type. The 1/300 solution gives an increased inhibition, thoroughly irregular in character and not increasing for time increase. The 1/200 solution has no more inhibitive power than preceding strength and resembles it in irregularity and lack of effect of increased exposure. When, on reaching the death point, we decrease the time exposure, an extreme inhibition is shown which remains the same although time of exposure is shortened progressively to fifteen minutes for the 1/100 solution. Marked irregularity in action is the character of inhibition throughout.

PRODIGIOSUS EXPERIMENTS.

The tables in Group 2* show the results of the experiments with cultures of *Bacillus prodigiosus.*

* Tables and details omitted. See footnote at beginning of article.

SUMMARY OF EVIDENCE ON PRODIGIOSUS.

Taking for consideration first the strength of solution and time of exposure to same necessary to produce death of *Bacillus prodigiosus,* we find that a 1/100 solution has to act for ten minutes before the death point is reached. The same solution for a shorter period of time or a weaker solution for an hour are not effective. The second factor, or the sphere of inhibition, begins late, first appearing on an exposure of fifteen minutes to a 1/300 solution. It is then slight in character. This inhibition increases progressively and irregularly for longer exposures to same strength. The inhibitory effect is moderately increased, for respective times of exposure, over 1/300 solution on using 1/200 solution. Again, it is characterized by irregularity of action, although more or less progressive as time of exposure is lengthened. On exposing to a 1/100 solution for a shorter period of time than produces death we get a marked irregular inhibitory effect, mainly shown during the first three days of experiments.

Thus it is seen that the inhibitory sphere in this series is rather contracted and markedly irregular in type, giving the impression of being more or less unreliable.

and increasing in effectiveness, progressively, for longer exposures. When, on exposing to the 1/100 solution for shorter periods of time than the death point (less than thirty minutes), we first get a very extreme inhibition, which progressively becomes less as time of exposure is decreased. In short, inhibition in this series is slow in making its appearance and is even then, for a period, of such unsatisfactory character that it should be disregarded until the 1/200 solution is reached. From this point inhibition is progressive and reliable in type.

STAPHYLOCOCCUS PYOGENES AUREUS EXPERIMENTS.

The tables in Group 4 show the results of the experiments made with cultures of *Staphylococcus pyogenes aureus.*

CONSIDERATION OF EXPERIMENTAL EVIDENCE ON STAPHYLOCOCCUS AUREUS.

1/1000 for *fifteen* minutes shows a very considerable inhibitory effect, irregular in character. A is free from growth throughout. On the first day B shows ½ control growth, C no growth. On the second day B has increased to 2/3 its control, while C gives a minute fraction of growth, which on following days does not present any increase. From the third day to the fifth day, inclusive, B increases slowly, being about .5 behind control at all times.

1/1000 for *thirty* minutes gives the most extreme inhibitory effect, being almost effective. A and B remain free from growth throughout; C shows a questionable growth the first day. On the second day it is a very minute fraction of growth which, on the following days, gives no increase.

1/1000 for *sixty* minutes shows no growth throughout.

1/500 for *thirty* minutes shows no growth throughout.

1/500 for *fifteen* minutes shows no growth throughout.

1/500 for *ten* minutes shows no growth throughout.

1/500 for *five* minutes shows no growth throughout.

1/500 for *four* minutes shows no growth throughout.

1/500 for *three* minutes shows a very considerable inhibitory effect, irregular in character. B is free from growth throughout. On the first day A presents a minute fractional growth and C a small fraction of growth. From the second day on A increases by small fractions, equaling on fifth day 1/5 control growth. During same period of time C increases a little more rapidly, equaling on last day 1/3 of its control.

1/500 for *one* minute is negative in action.

1/300 for *three* minutes shows no growth throughout.

1/300 for *one* minute shows no growth throughout.

GROUP 4.—ACTION OF SOLUTION ON STAPHYLOCOCCI PYOGENES AUREUS (FIVE-DAY-OLD CULTURES).

TABLE 49.—BROMIN 1-1000. EXP. 15 MIN.

Day.	A	A'	B	B'	C	C'
1	0.	3.	1.7	2.4	0.	3.
2	0.	3.8	2.1	3.	.02	4.
3	0.	3.9	3.	3.5	.02	4.4
4	0.	3.9	3.1	3.6	.02	4.5
5	0.	4.	3.1	3.7	.02	4.5

TABLE 50.—BROMIN 1-1000. EXP. 30 MIN.

Day.	A	A'	B	B'	C	C'
1	0.	2.8	0.	2.5	?	3.
2	0.	3.2	0.	2.9	.01	3.4
3	0.	3.7	0.	3.2	.01	3.6
4	0.	3.8	0.	3.5	.01	3.9
5	0.	3.9	0.	3.6	.01	4.

TABLE 51.—BROMIN 1-1000. EXP. 60 MIN.

Day.	A	A'	B	B'	C	C'
1	0.	2.7	0.	2.8	0.	2.9
2	0.	2.9	0.	3.1	0.	3.2
3	0.	3.3	0.	3.5	0.	3.7
4	0.	3.6	0.	3.7	0.	3.9
5	0.	3.7	0.	3.7	0.	4.

TABLE 52.—BROMIN 1-500. EXP. 30 MIN.

Day.	A	A'	B	B'	C	C'
1	0.	3.	0.	2.7	0.	3.5
2	0.	3.3	0.	3.	0.	4.
3	0.	3.7	0.	3.2	0.	4.2
4	0.	3.9	0.	3.4	0.	4.3
5	0.	4.	0.	3.6	0.	4.3

TABLE 53.—BROMIN 1-500. EXP. 15 MIN.

Day.	A	A'	B	B'	C	C'
1	0.	4.8	0.	2.6	0.	3.8
2	0.	4.9	0.	2.7	0.	3.8
3	0.	4.9	0.	3.	0.	3.9
4	0.	5.	0.	3.1	0.	4.
5	0.	5.	0.	3.3	0.	4.1

TABLE 54.—BROMIN 1-500. EXP. 10 MIN.

Day.	A	A'	B	B'	C	C'
1	0.	2.4	0.	3.	0.	2.8
2	0.	2.7	0.	3.3	0.	3.1
3	0.	3.	0.	3.5	0.	3.4
4	0.	3.1	0.	3.7	0.	3.7
5	0.	3.6	0.	3.9	0.	4.

TABLE 55.—BROMIN 1-500. EXP. 5 MIN.

Day.	A	A'	B	B'	C	C'
1	0.	3.	0.	2.6	0.	3.1
2	0.	3.3	0.	3.	0.	3.2
3	0.	3.5	0.	3.4	0.	3.6
4	0.	3.7	0.	3.5	0.	3.9
5	0.	3.8	0.	3.6	0.	4.1

TABLE 56.—BROMIN 1-500. EXP. 4 MIN.

Day.	A	A'	B	B'	C	C'
1	0.	2.2	0.	1.	0.	2.3
2	0.	2.4	0.	1.2	0.	2.5
3	0.	3.	0.	2.	0.	2.6
4	0.	3.4	0.	2.7	0.	2.9
5	0.	3.7	0.	3.	0.	3.1

TABLE 57.—BROMIN 1-500. EXP. 3 MIN.

Day.	A	A'	B	B'	C	C'
1	.02	2.3	0.	3.4	.3	3.
2	.3	2.5	0.	3.6	1.1	3.3
3	.3	2.7	0.	3.8	1.4	3.9
4	.5	3.	0.	3.9	1.6	4.
5	.6	3.3	0.	4.	1.7	4.1

TABLE 58.—BROMIN 1-500. EXP. 1 MIN.

Day.	A	A'	B	B'	C	C'
1	3.2	3.	3.2	3.4	2.8	2.3
2	3.9	3.8	4.	3.9	3.4	2.7
3	3.9	3.8	4.1	4.	3.6	2.9
4	3.9	4.	4.3	4.2	3.8	3.
5	4.	4.1	4.4	4.3	4.1	3.1

TABLE 59.—BROMIN 1-300. EXP. 3 MIN.

Day.	A	A'	B	B'	C	C'
1	0.	2.1	0.	2.8	0.	2.7
2	0.	2.4	0.	3.	0.	3.3
3	0.	2.6	0.	3.2	0.	3.6
4	0.	2.8	0.	3.5	0.	4.
5	0.	3.1	0.	3.6	0.	4.2

TABLE 60.—BROMIN 1-300. EXP. 1 MIN.

Day.	A	A'	B	B'	C	C'
1	0.	2.1	0.	2.8	0.	3.
2	0.	2.5	0.	3.	0.	3.1
3	0.	3.1	0.	3.2	0.	3.3
4	0.	3.2	0.	3.4	0.	3.6
5	0.	3.4	0.	3.5	0.	3.8

TUBERCULOSIS EXPERIMENTS.

The details of the experiments with cultures of *Bacillus tuberculosis* are detailed in Group 3.*

SUMMARY OF EVIDENCE ON TUBERCULOSIS.

Taking for consideration, first, the strength of solution and time of exposure to same necessary to kill the *Bacillus tuberculosis,* the experiments show that a 1/100 solution must be employed for thirty minutes, a weaker solution, or a shorter exposure to the same strength not being effective.

The inhibitory power, being the other factor to be considered, of solution on this micro-organism is very slow in making its appearance. It comes into evidence very slightly for the first time on an exposure of thirty minutes to a 1/300 solution. A longer exposure to same strength gives a still slighter inhibition, showing its unreliability as an inhibitive in this strength. The 1/200 solution, however, is much more satisfactory, giving a medium inhibition for fifteen minutes exposure

* Tables omitted. See note at beginning of article.

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SUMMARY OF EVIDENCE ON STAPHYLOCOCCUS PYOGENES AUREUS.

The death of micro-organisms is produced by any one of several strength solutions acting for periods of time markedly and rapidly shorter as strength of solution employed is increased. Thus a 1/1000 solution is effective in sixty minutes, a 1/500 solution in four minutes, and a 1/300 solution in one minute. Since the death point is so soon reached, the inhibitory sphere must, of necessity, be a very small one. It begins at once for the fifteen minute exposure to the 1/1000 solution and is then marked. The thirty minutes exposure shows an augmentation in inhibition far out of proportion to the time increase. Considering the 1/500 solution for an exposure less than required to produce death (less than four minutes) we find a three minute exposure of marked inhibitory value, while an exposure of one minute is devoid of power in this respect. The 1/300 solution, being effective in one minute, is absolute in action, hence possesses no sphere of inhibition.

It is shown, therefore, that bromin has a peculiar, specific effect on *Staphylococcus aureus*, being reliably effective in very weak solutions for very short periods of exposure to same.

STREPTOCOCCUS PYOGENES EXPERIMENTS.

The tables* in Group 5 show the results of the experiments with cultures of *Staphylococcus pyogenes.*

CONSIDERATION OF EXPERIMENTAL EVIDENCE ON STREPTOCOCCUS PYOGENES.

1/1000 for *fifteen* minutes presents an extreme inhibitory effect, being almost effective. B and C show no growth throughout. A gives no growth until the fifth day, when a very minute fraction of growth appears, which increases but a minute fraction on succeeding days.

1/1000 for *thirty* minutes shows no growth throughout.

1/1000 for *sixty* minutes shows no growth throughout.

1/500 for *ten* minutes shows no growth throughout.

1/500 for *five* minutes shows no growth throughout.

1/500 for *four* minutes shows no growth throughout.

1/500 for *three* minutes gives a very extreme inhibitory effect, being almost effective. B and C are free from growth throughout. A is free from growth until the fourth day, when a minute fraction of growth appears. This increases slightly during remaining days and is only a small fraction of growth on the last day.

1/500 for *two* minutes presents a very marked inhibitory effect. A and C are free from growth throughout. On the first day B gives a minute fraction of growth, which increases by minute fractions until the fourth day. From this point on it increases by small fractions, equaling on last day 1/5 of control growth.

SUMMARY OF EVIDENCE ON STREPTOCOCCUS PYOGENES.

Streptococcus pyogenes is killed by an exposure of thirty minutes to a 1/1000 solution. The same is true of an exposure of four minutes to a 1/500 solution. Like in the preceding series, the sphere of inhibition is here a limited one because the points at which inhibition and death occur closely approximate each other. An exposure of fifteen minutes to a 1/1000 solution presents extreme inhibition, the next length of exposure giving death. And when we expose to a 1/500 solution for a period shorter than necessary to produce death we get a very extreme inhibitory effect, which becomes slightly less marked for a still shorter exposure. It is, therefore, evident that bromin has a marked selective action on the *Streptococcus pyogenes aureus*, to a smaller degree, however, than it has on the preceding series.

* Tables omitted. See note at beginning of article.

BLASTOMYCES EXPERIMENTS.

The experiments with blastomyces cultures are detailed in Group 6.*

CONSIDERATION OF EXPERIMENTAL EVIDENCE ON BLASTOMYCES.

1/1000 for *fifteen* minutes gives a marked inhibitory effect. There is no growth until the fourth day, when B gives a small fraction of growth, while A and C are still free from growths. On the fifth day A shows no growth, B increases a fraction, C presents a small fraction of growth. On the sixth day A is free from growth, B and C. increase fractionally. On the seventh day A shows a small fraction of growth; B and C increase fractionally, the former equaling 1/6 and the latter 1/16 of control growths. From this point on till the tenth, or last day, all increase progressively by small fractions. On the tenth day A equals 1/15 of its control, B 1/5 of its control and C 1/6 of its control.

1/1000 for *thirty* minutes shows a quite marked inhibitory effect. A is free from growth throughout. B is free from growth until the ninth day, when an extremely minute fraction of growth appears, which does not increase on following, or last day. C is free from growth till the fifth day. A small fractional growth then appears, which, from day to day, increases fractionally and equals 1/7 of control growth on tenth day.

1/1000 for *sixty* minutes is free from growth throughout.

1/500 for *fifteen* minutes is free from growth throughout.

1/500 for *ten* minutes shows a quite marked inhibitory effect. A remains free from growth throughout. B remains free from growth till the eighth day, when a minute fraction appears which increases moderately, equaling 1/7 of control growth on tenth day. C shows no growth till the ninth day, when a minute fraction appears. This increases by a small fraction on tenth day.

1/500 for *five* minutes presents a marked irregular inhibitory effect. A and B are free from growth throughout. C shows no growth until the sixth day, when a fractional growth appears. From the seventh day on this increases very rapidly, equaling on tenth day 4/5 of the control growth.

1/300 for *five* minutes shows no growth throughout.

1/300 for *two* minutes shows no growth throughout.

1/300 for *one* minute shows no growth throughout.

SUMMARY OF EVIDENCE ON BLASTOMYCES.

The death of *Blastomyces* is produced by: (1) A 1/1000 solution of bromin acting for sixty minutes; (2) a 1/500 solution acting for fifteen minutes; (3) a 1/300 solution acting for one minute. As we would expect from the efficiency of solution on this fungus, the range of inhibition is limited.

An exposure of fifteen minutes to a 1/1000 solution gives marked inhibition, which is increased proportionately for the thirty minute exposure. On exposing to a 1/500 solution for shorter periods of time than necessary to produce death (less than fifteen minutes) we get marked inhibition, decreasing somewhat for decrease in time of exposures. The action of the 1/300 solution is absolute, hence there can be no place for inhibition. In this series bromin acts vigorously and consistently.

ACTINOMYCES EXPERIMENTS.

The experiments with *Actinomyces* cultures are detailed in Group 7 (on page 350).

CONSIDERATION OF EXPERIMENTAL EVIDENCE ON ACTINOMYCES (BOVIS).

1/1000 for *fifteen* minutes shows a marked inhibitory effect, regular in character. There is no growth on experimental tubes until the fifth day, when B gives a small fraction of growth, A and C being free from growth. On the sixth day A is still free from growth, B increases a small fraction, and C presents a minute fraction of growth. On the seventh day A

* Tables omitted. See note at beginning of article.

gives a small fraction of growth, B increases fractionally, C increases to a fair fractional growth. From this point on to the tenth day all present a progressive, though moderate, increase. On the tenth day A equals less than 1/3 its control, B equals 1/3 its control and C ½ its control.

1/1000 for *thirty* minutes gives a marked inhibitory effect, slightly less than preceding, though regular in type. There is no growth until the fifth day, when C shows a small fraction of growth. On the sixth day A gives a minute fraction of growth, B a minute fraction and C a small fractional increase. On the seventh day A and B increase slowly, C rapidly, equaling ¼ its control. From the eighth day on A, B and C increase progressively at a fair rate, equaling respectively on the last day, ½, ⅓ and 3/5 of controls.

1/1000 for *sixty* minutes gives a more marked inhibitory effect, regular in character, than either of the preceding. There is no growth until the sixth day, when C gives a small fraction of growth, A and B being free from growth. On the seventh day A, B and C show small fractional growths which, on following days, increase progressively and equal respectively on the tenth day ½, ⅓ and less than ½ controls.

1/500 for *ten* minutes gives no growth throughout.

1/500 for *five* minutes presents an extreme inhibitory effect, regular in type. B gives no growth throughout. C shows no growth until the eighth day, when a very minute fraction appears, which, increasing very slowly, is still a small fraction on the tenth day. On the third day A shows a very minute fraction of growth, which does not increase until the sixth day, and then only a minute fraction. From this point on the increase is small and jerky in character, A being only a small fraction of growth on the tenth day.

1/500 for *two* minutes presents an extreme inhibitory effect, less so than the preceding, however. C is free from growth until the eighth day, when a very minute fraction of growth appears, which does not increase on the following days. A is free from growth until the sixth day, when a minute fraction of growth appears. This does not increase until the ninth and tenth days, when it does so fractionally. On the tenth day it is a small fractional growth. B, on the third day, shows a very minute fraction of growth, which, on the following days, increases very slowly by minute fractions. It is also, on the tenth day, a small fraction of growth.

1/300 for *ten* minutes shows no growth throughout.

1/300 for *five* minutes presents a very extreme inhibitory effect. B shows no growth throughout. On the eighth day A and C show very minute fractions of growth. These also increase minutely on the ninth and tenth days, when both the growths are still found to be minute fractions.

1/300 for *two* minutes presents an extreme inhibitory effect, less marked than preceding. There is no growth until the fifth day, when A shows a minute fractional growth, B and C being free from growth. On the sixth day A remains the same, B shows a minute fraction, C is free from growth. From this point on A increases very slowly, B minutely and C, remaining free from growth till the eighth day, increases slightly then. Thus, on the tenth day all are small fractional growths.

1/200 for *five* minutes shows no growth throughout.

1/200 for *two* minutes shows no growth throughout.

1/200 for *one* minute gives a very extreme inhibition. C gives no growth throughout. A is free from growth until the tenth day, when a very minute fraction appears. B is free from growth until the eighth day, when a very minute fraction appears, which increases only slightly on the following days.

1/100 for *two* minutes shows no growth throughout.

1/100 for *one* minute shows no growth throughout.

GROUP 7.—ACTION OF SOLUTIONS ON ACTINOMYCOSIS (BOVIS) (SEVEN-DAY-OLD CULTURES).

TABLE 78.—BROMIN 1-1,000. EXP. 15 MIN.

Day.	A	A′	B	B′	C	C′
2	0.	0.	0.	0.	0.	0.
3	0.	.4	0.	.4	0.	.3
4	0.	.7	0.	.7	0.	.6
5	0.	1.7	.1	2.3	0.	2.4
6	0.	2.7	.2	4.	.01	3.6
7	.2	3.6	.4	5.	.6	4.6
8	.4	4.8	.8	5.7	.9	5.7
9	.9	5.5	1.6	5.9	1.8	5.9
10	1.6	5.7	2.	6.	2.9	6.

TABLE 79.—BROMIN 1-1,000. EXP. 30 MIN.

Day.	A	A′	B	B′	C	C′
2	0.	0.	0.	0.	0.	0.
3	0.	.3	0.	.4	0.	.5
4	0.	.5	0.	.8	0.	.8
5	0.	1.6	0.	2.2	.1	2.1
6	.01	2.8	.02	3.9	.2	3.3
7	.3	3.4	.2	4.9	1.1	4.5
8	.7	4.7	.5	5.6	2.1	5.5
9	1.5	5.6	1.1	5.9	2.4	5.8
10	2.6	5.8	1.9	6.	3.7	5.9

TABLE 80.—BROMIN 1-1,000. EXP. 60 MIN.

Day.	A	A′	B	B′	C	C′
2	0.	0.	0.	0.	0.	0.
3	0.	.4	0.	.3	0.	.4
4	0.	.5	0.	.5	0.	.7
5	0.	1.3	0.	1.9	0.	2.
6	0.	2.4	0.	2.9	.1	3.9
7	.2	3.6	.2	3.8	.3	4.5
8	.5	4.5	.5	5.	.6	5.4
9	1.	5.5	1.	5.9	1.1	5.9
10	1.7	5.7	1.8	6.	2.6	6.

TABLE 81.—BROMIN 1-500. EXP. 10 MIN.

Day.	A	A′	B	B′	C	C′
2	0.	.2	0.	.1	0.	.1
3	0.	.9	0.	.7	0.	.5
4	0.	1.1	0.	2.	0.	1.1
5	0.	2.4	0.	2.7	0.	1.9
6	0.	3.1	0.	3.5	0.	3.
7	0.	3.9	0.	4.5	0.	3.7
8	0.	4.6	0.	5.6	0.	4.2
9	0.	5.1	0.	5.9	0.	4.9
10	0.	5.7	0.	6.	0.	5.7

TABLE 82.—BROMIN 1-500. EXP. 5 MIN.

Day.	A	A′	B	B′	C	C′
2	0.	.1	0.	.1	0.	.2
3	.01	.9	0.	.7	0.	1.
4	.01	1.4	0.	2.	0.	2.1
5	.01	2.4	0.	3.1	0.	3.
6	.02	3.1	0.	3.7	0.	3.7
7	.03	3.9	0.	4.1	0.	4.4
8	.03	4.7	0.	4.5	.01	5.1
9	.07	5.5	0.	5.1	.09	5.4
10	.2	6.	0.	5.8	.2	5.7

TABLE 83.—BROMIN 1-500. EXP. 2 MIN.

Day.	A	A′	B	B′	C	C′
2	0.	.2	0.	.1	0.	.1
3	0.	1.	.01	.8	0.	.6
4	0.	3.	.01	2.8	0.	2.
5	0.	4.3	.02	4.	0.	3.5
6	.05	5.	.03	4.8	0.	4.
7	.05	5.3	.1	5.3	0.	4.5
8	.05	5.5	.2	5.5	.01	5.
9	.1	5.8	.24	5.9	.01	5.7
10	.2	6.	.35	6.	.01	5.8

TABLE 84.—BROMIN 1-300. EXP. 10 MIN.

Day.	A	A′	B	B′	C	C′
2	0.	.2	0.	.1	0.	.1
3	0.	.5	0.	.6	0.	.5
4	0.	1.4	0.	1.6	0.	2.
5	0.	3.	0.	2.2	0.	3.4
6	0.	3.7	0.	2.8	0.	4.
7	0.	4.5	0.	3.7	0.	4.8
8	0.	5.4	0.	4.7	0.	5.3
9	0.	5.6	0.	5.5	0.	5.7
10	0.	5.9	0.	5.6	0.	6.

TABLE 85.—BROMIN 1-300. EXP. 5 MIN.

Day.	A	A′	B	B′	C	C′
2	0.	.5	0.	.5	0.	.4
3	0.	1.5	0.	1.3	0.	1.
4	0.	2.1	0.	2.	0.	2.
5	0.	3.1	0.	2.5	0.	2.7
6	0.	4.	0.	2.9	0.	3.7
7	0.	4.8	0.	3.2	0.	4.4
8	.01	5.2	0.	4.1	.01	5.
9	.02	5.4	0.	4.4	.02	5.2
10	.05	5.7	0.	5.1	.04	5.6

TABLE 86.—BROMIN 1-300. EXP. 2 MIN.

Day.	A	A′	B	B′	C	C′
2	0.	.1	0.	.1	0.	.1
3	0.	1.	0.	1.5	0.	.4
4	0.	2.9	0.	3.	0.	1.5
5	.01	4.2	0.	4.3	0.	2.7
6	.01	5.3	.01	5.4	0.	4.2
7	.05	6.	.02	6.2	0.	5.3
8	.2	6.1	.02	6.3	.02	5.5
9	.4	6.3	.03	6.4	.07	5.8
10	.6	6.4	.04	6.5	.1	5.9

TABLE 87.—BROMIN 1-200. EXP. 5 MIN.

Day.	A	A′	B	B′	C	C′
2	0.	0.	0.	0.	0.	0.
3	0.	.5	0.	.8	0.	1.
4	0.	1.8	0.	2.	0.	2.2
5	0.	3.	0.	2.9	0.	2.7
6	0.	4.5	0.	4.	0.	3.5
7	0.	5.2	0.	4.3	0.	4.1
8	0.	5.6	0.	4.9	0.	4.5
9	0.	5.9	0.	5.3	0.	4.9
10	0.	6.1	0.	5.6	0.	5.2

TABLE 88.—BROMIN 1-200. EXP. 2 MIN.

Day.	A	A′	B	B′	C	C′
2	0.	0.	0.	0.	0.	0.
3	0.	.4	0.	.5	0.	.7
4	0.	1.1	0.	1.4	0.	1.6
5	0.	2.7	0.	2.5	0.	2.7
6	0.	3.7	0.	2.9	0.	3.4
7	0.	4.4	0.	4.2	0.	3.9
8	0.	5.2	0.	4.6	0.	4.3
9	0.	5.7	0.	4.8	0.	4.7
10	0.	6.	0.	5.2	0.	5.5

TABLE 89.—BROMIN 1-200. EXP. 1 MIN.

Day.	A	A′	B	B′	C	C′
2	0.	0.	0.	0.	0.	0.
3	0.	.1	0.	.4	0.	.3
4	0.	.2	0.	.8	0.	.6
5	0.	1.1	0.	1.4	0.	2.
6	0.	2.4	0.	3.	0.	4.
7	0.	3.4	0.	3.9	0.	5.
8	0.	4.2	.01	5.2	0.	5.5
9	0.	5.2	.05	5.6	0.	5.8
10	.01	5.5	.2	5.8	0.	6.

TABLE 90.—BROMIN 1-100. EXP. 2 MIN.

Day.	A	A′	B	B′	C	C′
2	0.	.5	0.	.1	0.	.1
3	0.	1.	0.	.2	0.	.2
4	0.	2.	0.	.9	0.	1.4
5	0.	3.	0.	2.	0.	2.
6	0.	3.2	0.	2.8	0.	2.7
7	0.	4.	0.	3.5	0.	3.5
8	0.	4.3	0.	4.2	0.	4.5
9	0.	4.6	0.	4.6	0.	5.
10	0.	5.	0.	5.	0.	5.2

TABLE 91.—BROMIN 1-100. EXP. 1 MIN.

Day.	A	A′	B	B′	C	C′
2	0.	.1	0.	.2	0.	.2
3	0.	1.5	0.	2.	0.	1.8
4	0.	3.	0.	3.5	0.	3.2
5	0.	4.6	0.	4.9	0.	4.2
6	0.	5.	0.	5.1	0.	5.1
7	0.	5.6	0.	5.7	0.	5.8
8	0.	5.8	0.	5.9	0.	6.
9	0.	5.9	0.	6.	0.	6.2
10	0.	6.	0.	6.1	0.	6.2

SUMMARY OF EVIDENCE ON ACTINOMYCES (BOVIS).

The death of *Actinomyces bovis* takes place on an exposure of: (1) Ten minutes to a 1/500 solution; (2)

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ten minutes to a 1/300 solution; (3) two minutes to a 1/200 solution; (4) one minute to a 1/100 solution. Thus we find a fair degree of progressiveness in action of various strength solutions. The second factor, or inhibition, begins at once on an exposure of fifteen minutes to a 1/1000 solution and is marked. A thirty minute exposure to the same strength, for some reason, shows a slightly less intense effect, while an exposure of sixty minutes presents an increase in effectiveness. On exposing to a 1/500 and 1/300 strength for less than ten minutes (death point) we find very extreme inhibition, becoming somewhat less as time of exposure is shortened. Inhibition is a trifle more pronounced by the 1/300 solution.

A 1/200 solution for one minute presents a very extreme inhibition. For the 1/100 solution there is death with no sphere of inhibition. The sphere of inhibition in this series, though somewhat limited, is progressive in character.

GENERAL SUMMARY.

In making a summary of the anti-microbic effect of aqueous solutions of bromin of various strengths and acting for various periods of time, it serves our purpose best, for the sake of clearness, to adhere to the two divisions previously indicated. These were: (1) The absolute death point of the micro-organisms as expressed in terms of strength of solution employed and time of exposure to same; (2) the power of solutions to inhibit growth of micro-organisms (depending also on strength of solution and time of exposure to same) exhibited as a forerunner of absolute death.

Considering the first division and making a table of comparative susceptibility of micro-organisms to solutions, beginning with the most easily destroyed and graduating to the most resistent, we find that absolute destruction of micro-organisms occurs on exposing to solutions as indicated in Table 92:

TABLE 92.

Micro-organism.	Strength of solution.	Time of exposure.
Streptococcus Pyogenes	1-1000	30 minutes.
	1- 500	4 minutes.
Staphylococcus Pyogenes Aureus	1-1000	60 minutes.
	1- 500	4 minutes.
	1- 300	1 minute.
Actinomycosis (bovis)	1- 500	10 minutes.
	1- 300	10 minutes.
	1- 200	2 minutes.
	1- 100	1 minute.
Blastomycosis	1-1000	60 minutes.
	1- 500	15 minutes.
	1- 300	1 minute.
Bacillus Prodigiosus	1- 100	10 minutes.
Bacillus Tuberculosis	1- 100	30 minutes.
Bacillus Anthracis plus spores	1- 100	60 minutes.

A very wide range in efficiency of solutions is seen to exist between *Streptococcus pyogenes* and *Bacillus anthracis*. An examination of the table shows that the effectiveness of solutions is exhibited in three main groups: (1) Group 1, consisting of *Streptococcus pyogenes* and *Staphylococcus pyogenes aureus*, where the anti-microbic power is extremely well marked, being almost specific for both micro-organisms, but of special importance for its effect on *Staphylococcus pyogenes aureus;* (2) Group 2, consisting of *Actinomyces* and *Blastomyces*, where less efficiency is shown, but where the effect is still very satisfactory; (3) Group 3, consisting of *Bacillus prodigiosus, Bacillus tuberculosis*, and *Bacillus anthracis* plus spores, where there is a very considerable slump in efficiency of solutions. On the spore forming *Bacillus anthracis* the effect is very unsatisfactory.

Taking for consideration now the second division, or the inhibition in growth of micro-organisms due to actions of solutions on them, which, as has been mentioned before, depends jointly on the strength of solutions employed and the time of exposure to same, we will take up this function in relation to the three groups previously made. In the cocci group, the inhibitory sphere, though vigorous and progressive in character, is very restricted because of the close approximation of the points at which inhibition and death occur. In the fungi group, from the same cause, the sphere of inhibition is again very restricted though progressive in character. It presents a slightly greater range in inhibition than does the cocci group. In the bacilli group where, from the tardy appearance of the death point, we would expect to find a long and progressive sphere of inhibition, we find just the opposite. Here, due to the tardiness of its appearance, we get an inhibitory sphere rather contracted in character and one which is markedly irregular in type, giving one the impression of being highly unreliable. Progressiveness in action is strikingly absent.

DEDUCTIONS.

1. In a solution of bromin we have a germicidal agent that presents a peculiar selective action for certain groups of micro-organisms, and then acts more or less indifferently toward another group. In other words, on cocci and fungi a 1/300 solution is effective in a brief time, thus exhibiting a very marked germicidal action on them. On the other hand, on bacilli, especially spore forming, the germicidal effect of solutions is disappointing, a 1 per cent. solution having to act for a very considerable period of time before death is produced.

2. It differs from an ideal antiseptic in that:

(a) It is hard to prepare, being extremely irritating to eyes and mucous membranes.

(b) It is very unstable, having to be kept in a glass retainer. Even then it loses its power gradually, hence fresh solutions have to be made frequently.

(c) It is not markedly penetrating.

(d) It has to act for a considerable period of time to be effective on all micro-organisms.

(e) It coagulates albumen.

3. It approaches an ideal antiseptic in that:

(a) It is non-toxic and non-irritating in a strength that is effective.

(b) It does not produce an appreciable stain.

4. Lastly, it is necessary to state that in order to be effective on all classes of micro-organisms a 1 per cent. solution must be used for the period of one hour.

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LANDRY'S PARALYSIS; RECOVERY, PARTIAL RELAPSE AND COMPLETE RECOVERY.*

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Cases which show the typical symptoms of Landry's syndrome in characteristic form are sufficiently rare to make even isolated instances worth reporting, where they have been minutely observed. Much discussion has been spent on the question of the existence or non-existence of such a morbid entity as Landry's disease, but a good deal of it has been wasted on the consideration of cases reported as Landry's, but really not properly coming under that title. Whatever name may

* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Fifty-eighth Annual Session, held at Atlantic City, June, 1907.

have been given to these cases and however much confusion may have arisen from imperfectly observed or incompletely described instances, there is certainly a symptom-group which can not be put under the heads of multiple neuritis, of spreading myelitis, or of poliomyelitis, but which does fit the description of "acute ascending paralysis" or Landry's disease. The points of diagnostic distinction are that the onset should be acute, its character generally ascending, with paralysis more or less complete, but with little or no change in sensibility, entire loss of the deep reflexes and usually of the superficial ones, without involvement of the sphincters, and with no distinct or at least no characteristic pain. One of the stumbling blocks of those anxious to settle the classification and pathologic relations of the disease has always been the innumerable supposed causal troubles described: syphilis, alcohol, infected wounds, cold, exposure and so on. Here, too, confusion has probably been caused by the lack of clear distinction by patient or examiner between predisposing and exciting causes. Syphilitic disease and habitual alcoholic excess may render their victims an easy prey to innumerable ailments, but are they to be rated as causes of all the diseases for whose admission to the economy they do no more than unbar the door? We still talk of catching cold as if the "cold" were an entity that went up and down seeking to catch or be caught, and the word itself causes confusion by its association with expressions of temperature. In the case presently to be described the patient's illness was preceded by a thorough soaking in a chilly rainstorm. Is it to be supposed that this wetting caused the trouble? In the next person similarly exposed the result might very likely be a "bad cold," a staphylococcus infection of the upper air passages, while in another a spastic paraplegia might follow.

The difficulty of explaining the difference in effects of these similar causes resides in their not being really causes. To return to the analogy, such "causes" may open the door, but the results depend not on the open door but on what gets in through it. More probable still is it that causes of which one hears as bringing about so many and diverse acute states, wettings, exposure, sexual excess, blows on the spine, act in some unknown and at present unrecognizable way on disorders already present in the system but undeclared, hurry their development or bring them out in some manner.

Such speculations as these you may perhaps criticise as vague, but until the pathologists can offer us some definite and constant change in nerves or cord to characterize acute ascending paralysis, speculations must serve.

The condition is probably, then, due to some toxin produced by organisms unknown or unidentified present in the blood or the tissues, this toxin product having a selective action on the spinal cord. Other analogous conditions may be similarly explained, multiple neuritis, migratory or spreading neuritis, and that rare affection, family periodic palsy. Multiple neuritis offers in its symptom-complex the nearest approach to the symptoms of Landry's disease. Its onset is rapid, degeneration reaction is early present, the reflexes are lost; but the trunk muscles are not affected in polyneuritis, there are marked sensory changes, pain and tenderness of high degree. The paralysis instead of ascending either appears almost simultaneously in all four extremities or attacks the limbs in pairs and muscular atrophy shows itself very quickly, usually becoming extreme in some muscles. The spread of the affection in polyneuritis, while sometimes very rapid, is less even and symmetrical in its advance. It is rare to find distinct signs of involvement of the cord in pure neuritis, however severe the neural inflammation may be.

The resemblance between acute ascending paralysis and migratory neuritis, such as occurs occasionally soon after wounds of nerves and occasionally as a late sequence of wounds, sometimes not developing until after years of suffering from chronic nerve inflammation, is even a closer one, except in the slowness of the process in the latter disease. In it the cord is sometimes involved, sometimes a secondary involvement of the symmetrical member occurs. There is, owing to the difference in the character of the onset, no diagnostic difficulty involved, and I mention this disorder only to emphasize the point as to the clinical evidence for some toxic influence as a cause of all these troubles.

In a clinical study of injuries of nerves, in 1894, I argued strongly for the probability that a special toxic influence was needed to cause a spreading neuritis, and that few cases could be produced in which nerve inflammation had spread to a serious extent, had involved the cord or had caused death, except when evidence of some poison was present. Cases were there quoted of death from rapid ascending neuritis after influenza and diphtheria, after exposure to severe cold, and after actual wounds.

It is worth while to recall, besides, the instances reported by Graves of chronic ascending neural inflammation from repeated exposure to cold, the earliest account of any form of this disorder.

In family periodic paralysis there is a temporary paralysis which gives for the time being a picture almost exactly like that of Landry's. The onset is even more sudden, an hour or two sufficing for an apparently sound young man to be turned into a perfectly helpless paralytic. The electric reactions are so diminished as almost to be lost, the deep reflexes vanish, the superficial ones sometimes remaining, though much enfeebled; there is no change of temperature, no pain, no sensory disturbance and the sphincters are unaffected. In severe cases the action of the diaphragm is involved, the patient breathing only with the accessory external muscles of respiration. Such a condition as this must mean that the sufferer has been poisoned and that the effects of the poison are chiefly felt in the spinal cord, although there are local effects also, as is evidenced by the loss of electric contractility, even when the current is applied directly to the muscle, as was done in one of my cases by needles inserted into the muscle substance.

CASE.—*History.*—The patient at present under discussion, a Russian Jew, 21 years of age, was admitted to the Orthopedic Hospital and Infirmary for Nervous Diseases on April 13, 1905, sent by Dr. H. M. Fisher. His statement (which was somewhat confused, partly from mental dulness and partly from his struggles with the English language) was that he had been exposed in a cold rain storm five or six days previous, was thoroughly wet and chilled, and was obliged to continue at work. The next day he felt rather miserable, but went to work as usual. In walking to work he felt heavy and his use of his legs was awkward. An hour later he found himself unable to lift packages and heavy boxes, which was part of his duty. Before noon he was unable to walk except with support, and when he attempted to return home gave out before reaching there and had to be carried. He grew worse rapidly. He applied to the Pennsylvania Hospital on April 9, complaining of inability to walk and general weakness. The statement from the Pennsylvania Hospital reception ward is that no deep reflexes could be elicited, but that sensation was normal, and that he had some motion of

the legs, but was unable to walk. He was complaining of lumbar pain. He stayed only two days in the hospital and left unimproved, applying the next day after at the Infirmary for Nervous Diseases.

On examination on April 13 he had complete paralysis of all four extremities. The hands could be moved a little, but the arms could not be raised from the body, the only remaining movements of the limbs being partial flexion of the forearms. The legs were totally immovable, though one or two muscles seemed to contract in the legs to voluntary effort, a trifle more actively in the left leg than in the right.

It was difficult to determine to what degree the trunk muscles were affected. The patient appeared to be unable to turn over in bed, but this was partly because he could not use his legs at all in the movement and could not help himself with his hands. There was no involvement of the sphincters.

Examination.—Examination of the chest and abdomen was entirely negative. Pulse, temperature and respiration were unaffected, except that there seemed to be a little more than the normal use of the external muscles of respiration. Some complaint of pain was made, but not fixed or constant, and there was nowhere any tenderness. What pain there was was situated in or near the immediate neighborhood of the joints and appeared to be due more to the discomfort of posture and his inability to relieve himself by movement than to anything else. Examination as to sensibility showed perfect preservation in all forms. No reflexes could be obtained at all. There was no clonus nor Babinski reflex. Urinary examination was negative. No wasting of the muscles was present, so far as we could determine.

The patient was a slight, ill-nourished young man, but his muscles, though small in bulk, seemed to be of good quality. The day after his admission an electric examination was made, this being the seventh or eighth day from the attack. Dr. Boyer, the electrician of the hospital, reported distinct reactions of degeneration in the anterior tibial and calf muscles on the right side, and a beginning, less marked, reaction of degeneration in the corresponding anterior tibial group in the left leg, in which, however, the calf muscles were normal in response. The reaction of the thigh muscles was unchanged on both sides, unless perhaps there was a slight lessening of faradic contractility on the right.

Treatment.—The patient was ordered galvanism to the spine, stimulating massage, alternating applications of hot and cold water to the back and small doses of ergot. Eleven days after his admission the cremaster reflex reappeared distinctly on the left side. He was able to make a slight attempt at movement of the left foot in extension. No wasting was observed, nor did he seem to have any definite loss of general muscle substance. The reactions of degeneration were at this time still more marked in the areas already affected.

Sensation was again examined and showed normal condition. The only added observation of these first ten days was that the breathing apparatus seemed very slightly involved during the first week, but this difficulty did not increase and improved with the other symptoms from May 24. By the end of a month from the time of his admission he could turn over in bed, flex the legs on the thighs and the thighs on the abdomen, if the weight of the legs were supported. The power of extension was not improved. He could flex the fore arms, but grip in the hands was almost completely absent. There was still no atrophy.

The last of May the condition remained about the same, with a slight improvement in the ability to move, but with an increase of the degeneration reaction in all the leg and arm muscles except those of the left thigh. The patient was eighty-two days in the hospital and was discharged the first week in July, walking well, though with some remaining weakness of the extensor muscles of the legs. It was reported to me that this improved throughout the summer. I learned afterward that in October he had suffered a slight distinct relapse, with an increased weakness in the legs, affecting the flexor muscles as well as the extensors, but lasting less than a week, when it passed rapidly off and he has been perfectly well ever since.

This later relapse is curious, and it is to be regretted that a better description of it can not be furnished. I saw the patient only for a few minutes and have no exact knowledge of his condition. All his symptoms in the early attack were so much modified and obscured by his excitable, hysteric and apprehensive state of mind as to make it difficult to get a precise statement from him about anything, and it is possible that the later seizure may have been a passing nervous difficulty of an imaginary kind.

DISCUSSSION.

DR. ROBERT MCGREGOR, Saginaw, Mich., said that the mode of onset and clinical manifestations of Landry's paralysis are exceedingly characteristic, as clear and unmistakable as those of tabes dorsalis, and there is little risk of confusing the disease with poliomyelitis, and still less with multiple neuritis. The point which requires illumination in Landry's paralysis is the cause. What is the mysterious agent which so profoundly and specifically affects the motor elements? And why is it that the profound debility is sometimes entirely recovered from?

DR. J. H. MCBRIDE, Pasadena, Cal., called attention to the fact that Pasteur found that fowls and birds which have a normal temperature higher than that of man could not be inoculated with malignant pustule. If, however, he plunged a chicken into a bucket of ice water and chilled it, then he could easily inoculate it with malignant pustule, the disease running its usual course. That is to say, the chill reduced the normal resistance of the body and the disease developed. Dr. McBride thought that the experiment shows how any infection may enter the system through conditions that are favorable to its development, and it at least suggests that infections may be avoided by bodily hygiene.

DR. A. A. ESHNER, Philadelphia, affirmed that with respect to many diseases of the nervous system whose etiology is obscure it is perfectly reasonable to think of the possibility of a toxic cause, and this need not be of bacterial origin. It is well known that, as a result of derangements of metabolism, such as occur in diabetes and uremia, for example, and in conjunction also with malignant disease, definite changes occur in various parts of the nervous system. The conditions named are usually chronic, long-standing affections, and it is not difficult to understand how changes in nervous tissue may be brought about.

NERVOUSNESS: ITS SIGNIFICANCE AND TREATMENT.*

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The alarming mortality and widespread prevalence of nervous and mental disorders in recent years is sufficient to attract the attention of every intelligent citizen. At first sight it scarcely seems possible that during four years, viz., from 1900 to 1904, diseases of the nervous system were responsible for more deaths than any other class of ailments. A bulletin on health statistics has just been issued by the United States Census Bureau, which claims that no less than 302,876 persons died from some nervous disorder during this period. This large number of deaths is even greater than those who died from more common fatal tendencies of tuberculosis, typhoid fever, malaria, infectious fever, alcoholism, cancer, pneumonia, and even the epidemics of yellow fever. Hence nervous diseases take precedence of all other classes of diseases as a death producer or destroying agent.

That nervous and mental diseases are increasingly prevalent and widespread in America is very clear to

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all of us; indeed, so commonly manifest in American life and conduct has the essential characteristics of so-called nervousness become that we are jeeringly dubbed by the Europeans as a race of neurotics. It is certain, however, that this European criticism needs no defense from me, for when we as medical men come to carefully consider the superstrenuous methods associated with our educational, professional, political, social and business life, we are forced to acknowledge the reasonableness of its application, besides recognizing the fitness of the soil to produce such neurotic products.

By universal consent diseases of the nervous system are roughly divided into two great classes, viz., organic and functional. Now it is not, as a rule, exceedingly difficult to diagnosticate the diseases which have an organic basis, as these present clinical syndromes which are highly characteristic of such lesions. Such, however, is not the case with the so-called functional nervous disorders, as these for the most part are subjective in character, while the lesions themselves are very obscure. It is, therefore, the functional or unclassified nervous conditions that the term nervousness usually implies, and more especially those conditions in which the clinical phenomena is largely of a subjective character, like neurasthenia, psychasthenia, hysteria, incipient melancholia, dementia præcox and similar states. Whenever, therefore, such persons consult us, after excluding all organic diseases, as well as the more typical forms of chorea, epilepsy, goiter, ties and other nervous affections attended with certain other unmistakable objective clinical phenomena, you will, in the vast majority of instances, find associated with the so-called nervousness various mental perversions or lack of mental poise which are at least expressive of some defect of the central nervous system, which clearly indicate their psychical origin.

Hence, instead of a neurosis, we more often have to deal with a psycho-neurosis. The close relation, however, which exists between nervous and mental diseases has not until recently been fully recognized, and while undoubtedly the most conspicuous feature of modern medical progress lies in the effort to bring practical psychiatry into closer touch with general medical practice, yet much still remains to be done before the close alliance which exists between nervous and mental diseases is duly recognized and given that amount of attention by the general medical practitioner it richly deserves. Moreover, modern medical science also enforces the recognition of another principle which, to my mind, exceeds in interest and importance all others yet devised relative to their prevention and treatment. It is this that, while nervous and mental diseases are closely allied and in many instances are identical, yet in practical medicine there is an essential difference to be noted between purely nervous diseases, actual insanity and unsoundness of mind. As already observed, the clinical manifestations of nervous diseases having an organic basis are largely objective in character, hence their diagnosis is not usually attended with much difficulty. Moreover, the more pronounced forms of insanity do not, as a rule, furnish a very obscure problem for diagnosis.

But those disorders in which the neuro-psychologic clinical phenomena are blended in such a way as to obscure the underlying lesion are much more problematic, and it is the diagnosis, prognosis and treatment of these conditions that puzzle the medical practitioner. Such persons usually manifest in their clinical aspects the various kinds of nervous instability plus certain peculiar abnormal mental traits, or suffer from all degrees of unsound mental poise, which are usually considered harmless or of too trivial a character to cause any undue alarm, much less medical or legal restraint. Indeed, many such are told by their family physician that there is nothing the matter with them, that their complaints are all imaginary or that they will outgrow them; that their nervous distress is put on for the occasion and that they can prevent their alleged sufferings if they wish; that it is all nonsense and they ought to know better than be so foolish and irritable as well as nervous. The known progressive transitional character, however, of such obscure functional nervous conditions when neglected should place us on our guard and teach us that the unstable condition termed nervousness constitutes the very soil from which spring and develop all forms and degrees of actual insanity. Admitting that insanity always connotes unsoundness of mind, yet we must also recognize that there are very many persons who appeal to us for the relief of so-called nervousness and who perhaps are scientifically, medically speaking, of unsound mind. The failure to recognize the practical difference between the mental unsoundness which associates itself so commonly with so-called nervousness and actual insanity is, in my judgment, the cause of much confusion and error in diagnosis, prognosis and treatment of diseases of the nervous system. My experience proves that such persons usually present in their clinical aspects all forms and degrees of psychopathic abnormalities, and often by their strange, eccentric and even unreasonable conduct become the source of great anxiety and irritation to their friends and relatives as well as the family physician.

Moreover, their foolish extravagance and injurious dissipated habits may at times invite untold hardships on themselves and others, while their selfish, jealous and impulsive actions may not only render them difficult to control but also foster serious legal complications. Notwithstanding these various morbid mental characteristics, it is also not incompatible for such persons to appear intellectually bright and precocious, quick witted, good conversationalists and apparently able to argue logically, and because of this, their alleged rationality, be considered perfectly well by the general public and in no sense mentally or physically ill; such persons, however, to the educated, experienced physician present certain irrational neuro-psychologic features which at once stamp them as being more or less mentally unbalanced, or at least unsound in mind. Hence rationality and mild insanity are not incompatible and do not militate against the diagnosis of mental unsoundness.

In analyzing the clinical results of 1,200 patients admitted to my sanitarium during the past six years, the experience thus gained would seem to justify the recognition of at least five common types or classes of persons who present themselves to the family physician for diagnosis, prognosis and treatment, suffering from so-called nervousness. They are as follows:

1. The adolescent or youthful class.
2. The phrenasthenic or emotional class.
3. The psychasthenic or exhausted class.
4. The prodigal or dissipating class.
5. The impulsive or vicious class.

In these five classes are included all those persons who manifest the various forms and degrees of so-called nervousness plus peculiar mental perversions or lack of normal mental poise, which in reality constitutes the

various types of mental unsoundness or incipient insanity. Such persons, therefore, appeal to you and me for advice, care and treatment as well as proper protection, and while they present differing degrees of mental unsoundness, yet because of this can not be treated as insane or as ordinary lunatics. A slang phrase, however, can with propriety often be applied to such persons when we say that many of them "Don't know where they are going, but they are on their way," viz., to the asylum, reform school, poorhouse or penitentiary. Time will allow but a brief glance at each of these classes, although their enlargement has already been considered in a former paper.[1] In their consideration, however it is sufficient to state that their etiology may consist of both predisposing and exciting factors, and while perhaps the majority are subject to hereditary defects and bad family training, yet there are many who, by virtue of their constant dissipation, strenuous lives, poverty or some infection, may readily acquire the neuro-psychopathic state. Hence the causes may be both congenital or acquired, intrinsic or extrinsic, and subject to wide variation.

I. THE ADOLESCENT OR YOUTHFUL CLASS.

Under the first class we include both boys and girls who suffer primarily from the various neurotic conditions common to youthhood and the pubescent period, such as epilepsy, chorea, hysteria, menstrual disorders, neuralgia, headache, and the more serious complications of mental backwardness or feeblemindedness, like hebephrenia, catatonia, catalepsy and the incipiency of dementia præcox, together with a tendency to become incorrigible and even to commit crime. Such young persons rarely reach the asylums, nor do they in their incipient stages belong there, but they invariably appeal to their family physician for relief and advice, and what to do for them not only proves a vexatious question, but at once propounds one of the most difficult sociologic as well as medicolegal problems of the age; while its present solution by the majority of the states of the Union is, to say the least, most unsatisfactory.

II. THE EMOTIONAL OR PHRENASTHENIC CLASS.

The second class are the emotional or phrenasthenics. Such persons present every degree of emotional weakness or nervous instability, lack of will power and whose feelings are not subject to proper normal control. The chief pathologic conditions represented in this class are the so-called hysterias or phrenasthenias, the hypochondrias, and the morbid jealous and erotic states. Associated with their pathogenic psychologic manifestations are all kinds of stigma or disturbances of the various functions of the nervous system, hence their clinical syndrome is extremely variable, while the symptoms are protean in character. Such persons take to sickness as readily as ducks take to water; indeed, illness with many becomes a profession. As a class, while apparently rational they are exceedingly unreliable in their deportment as well as insincere in their actions, while their statements often lack the dignity of truth and justice. This class is chiefly represented by young females, yet many men are found roaming at large in its undefined pathologic territory. Like the preceding class, they appeal to the family physician for relief, but he, in his dilemma, rarely resorts to anything beyond the application of temporary expedients.

1. The Borderland of Insanity, Kansas City Med. Index Lancet, January, 1907.

III. THE EXHAUSTED OR PSYCHASTHENIC CLASS.

This class includes a large clinical area of persons suffering from neurasthenia, or nervous prostration, psychasthenia, psychosomasthenia, hypochondria, incipient forms of melancholia, paranoia, delirium, confusion and stupor, which accompany or follow the toxic psychoses, typhoid fever, scarlet fever, pneumonia, malaria, la grippe and other acute infections and poisons, beside those who suffer from the various kinds of sexual perversions. The chief clinical characteristics, however, of this class are seen in all degrees of exhaustion and strain, of the various functions of the nervous system, which leads to morbid self-introspection, selfishness, suspicion, doubt, anxiety and all degrees of morbid fear.

Often their occupation consists in talking about themselves and their ailments, which cause them to become diet cranks, health cranks, religious cranks, besides leading them to readily entertain false ideas about diseases, drugs and doctors, which they juggle with until they finally become easy prey for quacks and quackery, besides willing victims to the knife of the unscrupulous surgeon. Their rational conversation, however, readily acquits them from all forms of medical or legal restraint; hence they are allowed to procrastinate until the curable borderland is passed and their psycho-neurosis becomes sufficiently pronounced and incurable. Then the family physician is finally called on to sign a certificate committing them to the insane asylum, and thus become a ward of the state the rest of their lives.

IV. THE PRODIGAL OR DISSIPATING CLASS.

Such persons by virtue of their mental unsoundness, whether congenital or acquired, more often stray from the paths of physical, mental and moral rectitude, thus becoming willing victims to all forms of temptation and licentiousness. It therefore includes those who indulge in extreme excesses of all kinds, like the reckless sporting libertine, the drug habitués and the inebriates, many of whom suffer from syphilis and other sexual disorders. In this class are, therefore, to be found those who suffer from delirium tremens and other forms of alcoholism; the incipient forms of general paresis, cerebral and other forms of nervous syphilis, beside the various drug addictions.

Socially speaking, they are usually popular business men of talent, first-class mechanics and high-strung women of more than average ability and beauty. Their chief delight is found in fast company, wine, music and all kinds of sport, which indulgence they carry to an extreme degree. Hence they take life easy, spend money freely, and are high livers, frequenting the hotels, clubs, theaters, saloons and similar places to excess, besides enjoying prize fights, horse racing and betting. It includes, therefore, a large and growing class of neuropsychopaths, whose proper medical and legal control at the present is exceedingly lax and most unsatisfactory.

V. THE IMPULSIVE OR THE VICIOUS CLASS.

This class includes those persons whose mental unsoundness or psychopathic tendencies lead them into all forms of impulsive and even vicious conduct. Hence clinically they present all kinds of morbid propensities like that to steal, lie, cheat, set on fire and even commit suicide and homicide. Such persons, therefore, are known technically as kleptomaniacs, pyromaniacs, nymphomaniacs, etc., and as a class represent the more serious degrees of mental unsoundness and perhaps are

nearer actual insanity than those belonging to the other classes. Another class might still be added:

VI. SENILE OR DECADENT CLASS.

This includes both men and women who have passed the active period of life and suffer from the various abnormal psychologic complications incident to second childhood. Owing to their mental weakness, such persons are very restless, irritable, impulsive and quite emotional. They also at times become noisy, vicious and get beyond family control; what to do for them, however, taxes the skill, judgment and knowledge of the ablest clinicians.

DIFFERENTIAL DIAGNOSIS.

In thus alluding, perhaps imperfectly, to the chief clinical characteristics as they appear to me of those persons who consult us concerning the various manifestations of so-called nervousness, or, more properly, those who suffer from mental unsoundness, my remarks may appear at first sight to be of such a general and far-reaching character that some of you, or at least those whose experience is limited, may be tempted to offer the criticism that the clinical pictures thus presented could at least in some of their aspects be made to apply to the great majority of mankind, and which in a measure may be true. But it is the degree of damage existing or made on the higher controlling centers of the brain or the combination of symptoms and circumstances, together with all the facts belonging to the family and the personal life history of the patient, on which the diagnosis of mental unsoundness is based, rather than on any one particular mental peculiarity or even set of circumstances. From this standpoint, if time and your patience allowed, it would be easy for me to multiply reports of cases taken from the clinical records of the 1,200 cases admitted to my private sanitarium during the past five years, which would justly fit each class described, and in which, when made familiar with all the facts and circumstances surrounding them, you would not only agree, but readily discover that while they presented many features in common with the average normal individual, even to the extent of rational conversation and marked reasoning ability, yet there would be sufficient evidence forthcoming to convince even the most skeptical that the clinical syndromes presented not only furnished ample evidence of mental unsoundness, but that also each case came strictly within the province of borderland insanity.

TREATMENT.

For the successful treatment of the various forms of nervousness competent medical authority agrees that certain principles must necessarily be enforced which takes cognizance more especially of the mental as well as the physical organization of the individual, and that drugs and surgery, while meeting the indications of the latter or abnormal bodily conditions, often utterly fail to relieve the subtle pathogenic factors of the former, or those emanating from the mind. We are, therefore, compelled to employ other means and measures, either alone or in combination with drugs and surgery, if only as adjuvants which are also known to be very effectual when used arightly. These consist in the wise selection, judicious use and skillful application of hygienic and mechanical agents such as massage, electricity, hydrotherapy, employment, amusements, exercises, fresh air and sunshine, walking, riding, dietetics and, above all, healthful suggestions or psychotherapeutics, which includes all forms of moral or religious and pedagogic measures. The doctrine of right thinking, right living and right acting must be thoroughly inculcated simultaneous with the use of drugs and other therapeutic measures, as one without the other means certain failure. Moreover, in order that the agents referred to may have their most beneficial effects, it is necessary that they be used early or more especially in the incipient stages and in association with the following principles: 1. The substitution of new for old environments. 2. Isolation from home, friends and even neighbors. 3. Institution of mild discipline or restraint. 4. Removal of the cause, when possible, including peripheral and all other sources of irritation. Time forbids enlargement on the scientific use of all these remedial agents; suffice it to say that when used early and in suitable simultaneous combination they often produce results which are most astonishing. It is, however, in the lack of their early enforcement that so many failures occur. Realizing the extreme difficulty which at times besets the proper enforcement of these principles by the physician, I can not refrain from calling attention to two factors which to my mind play a very important rôle in not only the successful care and treatment of all forms of nervousness, but also in their prognosis and prevention.

I allude first to the inadequacy of the common law to deal with such persons; and second to the need of better state provision being made in their behalf. The legal necessity which now obtains compelling the unfortunate sufferer from neurasthenia, psychasthenia, feeblemindedness, melancholia, hebephrenia, or any other form of mental unsoundness, to be adjudged insane before receiving state or private medical care, often exacts a severe hardship on many who deserve more lenient consideration. This is very apparent when I cite an example with which no doubt you are all familiar. As it now stands the only provision made for the so-called neurasthenic suffering from morbid fears or sexual misgivings before he can receive state or private medical care is to be adjudged insane, which he refuses to do. The same law also obtains in every other form of mental unsoundness. Moreover, the only provision made for mentally defective children in many of the states is the state feeble-minded institutions or colonies, into which are often dumped the epileptic, the imbecile, all forms of dementia and other undesirable incurable insane conditions, including even the driveling idiot. Such environments can not fail to prove not only a serious handicap, but absolutely harmful to many such persons who are justly entitled to better provision from the city and state, and whose curable or borderland mental condition demands a hospital, free from such depressing associations, yet who, by force of their present circumstances, are compelled to accept the only means offered them. viz., the insane asylum, which, in spite of its charitable aspect, can not fail, in my judgment, to be to such as these an enemy in disguise.

The inability, however, to legally enforce, without being adjudged insane, the medical principle of isolation or mild restraint by the physician often proves a serious stumbling block to the prognosis of his neuropsychopathic patient, besides working a great hardship to many who, by virtue of kinship or social ties, are brought more or less into their daily close personal relationship. Especially is this true of those found suffering from neurasthenia, hysteria, psychasthenia, epi-

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lepsy, feeble-mindedness, primary dementia, incipient forms of hebephrenia, melancholia, mania, paranoia, all forms of inebriety, drug habitués and other dissipators, besides those who suffer from hereditary or acquired nervous defects, which lead them to become more or less incorrigible or display vicious and even criminal tendencies. Such persons, through lack of proper early legal and medical restraint, are more liable to contract syphilis, enter into some unfortunate marriage relation or get into the clutches of criminal and civil law, and finally land in either the divorce court, the penitentiary or the insane asylum, and thus become a ward of the state for the rest of their lives. Unless the patient happens to be financially able to provide for himself private proper and appropriate care, he is usually doomed to neglect or incurability, for the large majority prefer to refuse state aid rather than conform to the legal necessity of being adjudged insane, with all of its supposed disgrace and consequent stigma. Moreover, if treated at home by the family physician the chances of recovery are greatly lessened and at best is simply a makeshift. Hence the practical need of state and city sanitariums or psychopathic hospitals, built or arranged expressly for the reception and treatment of those persons found suffering from all forms of neuro-psychopathy and where the rules of admission are destitute of all the present objections of legal commitment, is not only a pressing need but an absolute necessity. In the larger cities special arrangements should be made with the managers of general hospitals to admit such persons and provide them with proper and appropriate care at the expense of the city, county or state. When this is done many who now refuse state aid will gladly accept it and thereby greatly increase the percentage of recoveries.

As a result of their psychologic disorders many such persons now refuse to submit to any form of treatment, much less restraint, even where their condition absolutely demands it. Such should, therefore, be compelled by law to conform to the dictates of modern medical teaching and experience rather than be allowed to gradually merge into a known chronic incurable condition and later become a ward of the state for the rest of their lives. That the failure of enforcement of early appropriate treatment due to inadequate legal provision is to a large extent the responsible agent for many of those unfortunates who are now legally compelled to spend their lives in the state hospitals for the insane, is now generally conceded by all competent authorities. As an economical, as well as a humane, measure, therefore, the various states of the Union could well afford to provide psychopathic or detention hospitals, halfway houses, if you please, between the asylum on the one hand and the home of the patient on the other, where the mentally unsound or the presumably curable nervous borderliners could receive such early appropriate medical care and treatment as they richly deserve without being compelled to be adjudged insane or subject to the many other objectionable features which now beset their legal commitment.

By such action the percentage of recoveries would be greatly increased while the pecuniary gain to the state in not having so many incurable insane to keep for the rest of their lives would more than provide sufficient funds to build and even maintain such hospitals.

In conclusion, it is, therefore, hoped that these remarks may be the means of stimulating a more earnest zeal and enthusiastic interest in the welfare of those unfortunates who, by virtue of some congenital or acquired condition, suffer from the various kinds of mental infirmity or so-called nervousness.

DISCUSSION.

DR. JULIUS GRINKER, Chicago, objected that Dr. Punton included entirely too much under the term nervousness and borderline insanity. He was reasonably certain that every one has at some time or other in his life attended a horse race, gone to a theater, visited a ball game, or been in a saloon, and done the very things which Dr. Punton pointed out as being characteristic of nervousness. There are periods in every person's life, he continued, when one might indulge in all these things and later realize their harmfulness. However, most of us are neither nervous nor on the borderline of insanity. Nervous persons have certain characteristics by which they are easily recognized. As regards the factor of environment, Dr. Grinker believes it to be inferior to that of heredity.

DR. ELLEN C. POTTER, Philadelphia, thinks it a great mistake to take girls of that age out of school and make them drop their studies. She believes that the discipline of the schoolroom is all right, even if the children have to drop off other visitations and go to bed early and get more rest in other ways. She knows many school girls who go to bed Friday night and stay there until Monday morning. Better results followed where they were kept in school under this plan than where they were taken out of school and dropped their studies and associations and interests in school life.

DR. WM. J. SULLIVAN, Lawrence, Mass., asked Dr. Punton to answer a question he was asked on the witness stand by the leading attorney of Massachusetts, in the presence of the Supreme Court justices of that state, in reference to the ability of a certain person to transfer property by will: "Do you recognize the difference between unsoundness of mind and insanity?"

DR. JOHN PUNTON, Kansas City, Mo., stated that, while it is absolutely necessary to take into consideration the family and personal history, it is also of considerable value taken in connection with the other symptoms of the case. The difference between unsoundness of mind and insanity has, he said, caused much confusion. The tendency to combine the two terms leads to many mistakes in diagnosis; but Dr. Punton believes that there is such a thing clinically as mental unsoundness which is not actual insanity, and that the medical profession generally does not recognize this distinction.

Moreover, at the present time, the subject is not given the place in medical literature that it deserves. Dr. Punton did not attempt to define these terms, but he is satisfied that there are persons suffering from degrees of unsound mind who can not be termed legally insane.

IODO-FORMIC ACID IN THE TREATMENT OF CHRONIC ULCERATIVE PHTHISIS.

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Since the publication[1] of my experience with formic acid and the iodin-formic acid solution I have received numerous inquiries concerning the employment of the latter in chronic ulcerative phthisis. Aside from the general question as to the preparation of the solution, special information is sought relative to its mode of administration in phthisis, the theory of its action in that condition, the accessory treatment and the history of a case in which the treatment has been employed. In the following I shall attempt to respond to these queries somewhat at length.

PREPARATION OF THE IODIN-FORMIC ACID SOLUTION.

A. To make the "mother preparation" (10 per cent. glycerino-iodo-formic acid) take:

Iodin q. s. (an excess, formic acid, taking up a certain quantity only).

1. THE JOURNAL A. M. A., April 28, 1906.

Formic acid, 40 per cent. (sp. gr. 1.200) ..... 25 c.c.
Glycerin, C. P. q. s. ad. (1.200) ..... 100 c.c.

The dissolving process must ensue in the cold formic acid and may be hastened by agitation.

B. To make 1 per cent. iodo-formic acid, take:

Glycero-iodo-formic acid (10 per cent.) ..... 10 c.c.
Distilled water ..... 90 c.c.

C. To make iodo-formic acid dil. (for internal administration), take:

Glycero-iodo-formic acid (10 per cent.) ..... 10 c.c.
Glycerin ..... 90 c.c.
Distilled water ..... 1400 c.c.

The iodin-formic acid solutions should be kept in dark-colored glass-stoppered bottles, and scrupulous care should be exercised to prevent any contamination of the solutions, especially with organic matter (dust).

ORAL ADMINISTRATION.

For internal use one tablespoonful of the diluted solution (C), representing 1 c.c. of solution B, is an average dose. In cases of hyperacidity this amount may not be well borne by the stomach. It may then be tried in smaller doses and may be diluted with water so that its acid taste equals that of a weak lemonade. Care must be taken, however, that the daily intake of water is not so large as to interfere with normal gastrointestinal function. The antiseptic influence of the diluted solution (C) on the intestinal tract, if not further diluted, is a very marked one. This, of course, is the greater the more of the solution has been taken by the patient. This antiseptic or antifermentative activity is clearly evinced by the condition of the feces and the absence from the urine of fermentation and putrefaction products.

The solution may be administered in much larger amounts than the average dose, provided the stomach can tolerate the acid. As a rule, the behavior of the stomach to the diluted solution may serve as an indicator of the amount to be imbibed. The diluted solution may be given from two to five times daily *after* breakfast, but *before* the other principal meals. It may also be administered between the repasts and at bedtime. It should never be combined with other drugs and should be administered at least an hour apart from any other medicinal agents.[2] It has no cumulative action in the common acceptation of the term, and may hence be taken for any length of time. It may be given during the period in which intramuscular injections of the 1 per cent. solution are being made.

INTRAMUSCULAR INJECTION.

For intramuscular injection the 1 per cent. solution of iodo-formic acid is exclusively employed. The intramuscular injection method is the only one from which specific results may be anticipated within a reasonable period.

Lack of time, expense and fear of the hypodermic needle, however, prevail on many phthisics to forego this, the only rational mode of administration of the iodin-formic acid. Almost my entire positive results were obtained by the intramuscular employment of the solution. The internal administration, it is true, fulfils a certain purpose. It suppresses tendencies to hyperfermentation and putrefaction and stimulates the appetite and the digestive and assimilative processes in general. The phthisical process in the lungs, however, I think, can only be influenced directly by injecting the solution into the muscles. I usually inject into the thickest portion of the interscapular muscles. The best hypodermic needle for the purpose is one made of platinum with an iridium tip. The ordinary steel needle, however, will also suffice if care is taken of its weakest spot—the soldered junction of the canula and the screw or connecting part. Experience has shown me that an ordinary-sized hypodermic needle is better adapted for the intramuscular introduction of iodo-formic acid than are the larger antitoxin needles commonly employed for the injection of mercurial preparations. Immediately after usage the needles should be well cleaned, dried and threaded.

Barrel and piston of the syringe should be made of glass. The barrel should be graduated and, if possible, have a capacity of three cubic centimeters. Excepting the needle, and possibly the finger rests, nothing but glass should enter into the construction of the syringe. It goes without saying that the piston must be ground to fit snugly into the barrel.

The injection site is prepared by cleaning with ether and placing a few drops of the iodin-formic acid on it. Ether in sufficient quantity exerts also a local anesthetic effect, which property is of decided value in intramuscular injections of any solution. The needle, of course, has to be inserted from above downward and should meet the body (seen from above) at an angle of about 75 degrees. This favors the injection fluid to reach the more massive muscular portions. Experience has taught me that the patient, when the injections are being applied, should be in a sitting posture on a stool or crosswise on a chair facing its back. The physician who is standing behind gains thus better control of his patient and averts, by preventing the patient from watching the necessary preparations, a great deal of psychical and probably also of physical pain. Properly executed the intramuscular administration of the formic-acid iodin solution is not painful at all or causes but a very mild localized sensation of burning for one or two minutes.

I usually start with 10 drops of the solution, of which I inject half into the left and half into the right interscapular muscle-bundles. I repeat this dose for three or four days, after which I administer, in aforementioned manner, 20 drops for another three or four consecutive days. Following this, I generally increase the dose to 30 drops (2 c.c.), injecting it every other day for two or three weeks. After the first month the dose is generally continued at 30 drops, but occasionally increased to 40 drops and administered in the same manner twice a week for a more or less protracted period.

As long as the patient bears well the intramuscular introduction of the solution it matters little how soon the larger dose is started in with and how long it is continued. In certain cases much larger amounts of the solution may be administered with impunity. In some cases, after the first few weeks of treatment, weekly injections of 30 or 40 drops very often suffice. The shortest time in which, according to my experience, the intramuscular administration of iodo-formic acid has yielded positive results was about four months.

THE THEORY OF ITS ACTION IN CHRONIC ULCERATIVE PHTHISIS.

The very small amount of iodin which is taken up by the cold formic acid precludes at once the assumption that the total action of the iodo-formic acid is to be ascribed to its contents of that halogen. The ingestion or injection of the solution never occasions iodism, and the urine and saliva do not exhibit iodin after the oral or in-

2. Until about a year and a half ago I frequently ordered patients to take the solution in some essence of pepsin or therelike, instead of in water. Although this admixture was usually made just prior of taking it, there seems little doubt that the potency of the iodin-formic acid was interfered with to some extent.

tramuscular introduction of the preparation. Even in the presence of well-developed renal disease, symptoms of iodism do not follow the administration of the iodo-formic acid. Again, if a specific local iodin action would result from the employment of iodo-formic acid we would invariably find some iodin in the excretions coming from the respiratory tract. The presence of iodin in the liquid discharges from the air passages is, however, the extremely rare exception.

In view of the fact that formic acid alone calls forth similar, though much less pronounced, improvement of chronic ulcerative phthisis, we have to consider it the more effective or at any rate the more important component of the preparation. Formic acid is pre-eminently an antiseptic; it belongs to a group of antiseptics which may be called "rational," because they are not foreign to the living organism. Formic acid, it is true, is an excretory substance in a certain sense, but it is also an integral part of the brain and the juice of muscle, and of all or almost all the glands with an internal secretion. Spleen, pancreas and thymus contain comparatively large amounts of it.[3]

Formic acid may be enumerated along with hydrogen sulphid, sulphuric acid, glycocol, urea, cystein, the cholic acids, glycuronic and acetic acids, as one of the chemical protectors of the organism. All these protective agents are products of normal metabolism. These chemical protectors render innocuous a great number of body-poisons; besides neutralizing a host of noxious substances that are known to us, they probably also avert the toxic action of other ectogenous or intrabiontic poisons which we have as yet not isolated.

Formic acid, outside the body, acts as a powerful reducing agent. It is, therefore, a logical supposition that formic acid exerts a similar function when occurring in the tissues and fluids of the body. In the organism it may hence convert a toxic substance into an innocuous compound by the removal of oxygen. Formic acid, on account of its reducing qualities, may be an essentiality in the cell-life of certain organs. The antiseptic and stimulating properties of the systemic formic acid appear to be due, in part at least, to the detoxicating results of its powers of reduction.

It is likely that the systemic formic acid performs its activity synchronously with some of the other chemical body protectors. Oxidation, reduction, hydration, dehydration and addition, the five protective reactions, may thus take place simultaneously in one group of cells. In other words, formic acid is only one of the chemical factors essential to the life and activity of certain cells. Its augmentation, as well as its deficiency in the organism, which are dependent on anomalous catabolic processes, may disturb cell and organ function and may hence be productive of disease. Such disturbances may make themselves felt even in organs which ordinarily contain little or no formic acid, whose health, however, is in a measure due to the regular function of those organs in which the usual reduction processes ensue on account of their normal contents of formic acid.

Taking up again the subject of iodin-formic acid, we understand now that the formic acid component of the latter may supply a deficiency in the organism, and that its antiseptic and other qualities may be explained on chemical grounds. The iodin constituent was originally added empirically on the supposition that it is an antiseptic which, given up by the general circulation, is deposited on the bronchial mucous membrane from whence it exerted its salutary influence on the surrounding tissues and on the bronchial secretions, averting the latter's decomposition. Laboratory experiments, subsequently conducted by me, demonstrated that the percentage amount of iodin in the 1 per cent. solution exhibited little or even no bactericidal activity when in a watery solution.

Results similar to those which some clinicians wanted to attain by the injection of tr. iodin into pulmonary cavities could, therefore, not be hoped for by the iodin-formic acid administration. Neither could any influence of the iodin, as in the Shurley-Gibbs method for the treatment of tuberculosis, or in that of Durante, be anticipated. Nevertheless, the addition of the iodin to the formic acid enhanced the latter's beneficial influence perceptibly. The action of the formic acid became more enduring while the reaction ensuing from the injection of the formic acid *per se* became less conspicuous. Less frequent intramuscular administration of iodo-formic acid proved of more decided value than the very frequent injection of formic acid alone. The introduction into the organism of the iodo-formic acid is followed by a longer abatement of the fever; the night sweats are more readily controlled; the cough loses its paroxysmal character, is accompanied as a rule by less pain and is often entirely suppressed; the appetite increases steadily; fatty ingesta are relished and well-born; and taking it all in all, the administration of iodo-formic acid produces more lasting effects than that of formic acid alone, as regards increase in body weight, strength and the powers of resistance.

Inasmuch as it can not be that what we are wont to look on as the specific iodin action by which the iodin factor of the iodo-formic acid displays its well-pronounced influence, it must be in some other manner that it produces the remedial effects in chronic ulcerative phthisis. For a number of years I have maintained that the physiologic action of many inorganic and organic drugs calling forth specific reactions when taken in minute doses is solely dependent on their catalytic qualities. The iodin of the iodin-formic acid, so introduced into the organism that it may come in contact with the diseased lung tissue, acts in the latter as a catalyzer. I would classify the iodin of the 1 per cent. solution as an inorganic catalyzer with specific action.

The latter I would define as a catalytically acting body affecting only substances of specific structural and stereochemic arrangement. The action of such a catalyzer is in many respects analogous to that of a ferment. Ferments as well as catalyzers remain unaltered by the chemical process which they bring about. The iodin very likely tends to combine with a constituent of the normal or pathologic tissues or with one of the disintegration products due to its own catalytic activity. This (presumably hypothetical) compound is of a very unstable nature, undergoing dissolution the moment it is formed, setting free thereby the iodin which may continue to break up catalyzable structures and substances. In reality, however, the iodin no doubt loses a part of its catalytic energy when this has been actively engaged for some time. This opinion, though, I base on purely clinical grounds.

I would venture too far into the realm of speculation were I, on the strength of our meager knowledge con-

3. In leukemia formic acid occurs as a rule in greatly augmented quantities and may be found in the marrow, the blood, urine, saliva and sweat. Its augmentation may be due to the same factor which gives occasion to the absolute increase of uric acid in the blood of leukemics—deficient oxidation. Ordinarily, the surplus formic acid in the tissues and body fluids is further oxidized to carbonic anhydrid and water

cerning the specific catalyzers, to go into details of iodin-catalysis at the present time. I do not know whether iodin exhibits catalytic properties when administered in larger amounts, in other combinations or taken by the mouth; whether it is a catalyzer *per se*, or only when forming a salt or when in proteid combination; whether its catalyzing energy is preserved or evoked by the formic acid, or whether, on the contrary, iodin-catalyzation enhances the activity of the formic acid.

THERAPEUTIC EFFECTS.

The primary therapeutic effect of the iodin-formic acid in chronic ulcerative phthisis appears to be a local one. I base this opinion on the following clinical facts, viz.: The pain in the chest, when present, is relieved after a few injections; the cough soon loses its paroxysmal character when the patient is under the influence of the drug; the expectoration, which may have been profuse, becomes scanty and attains a less purulent character, and the bacterial flora of the sputum (with exception of the bacillus tuberculosis) becomes perceptibly reduced after ten or fifteen injections. The elastic tissue fibers and the tubercle bacilli do not disappear so readily from the sputum, but in the majority of cases they are no longer found in it after from five to seven months' treatment with the iodin-formic acid.

The 1 per cent. solution participates in the removal of the decaying material from the lungs and tends to check ulceration and caseation. Its continued administration favors sclerotic metamorphosis of the margins of the ulcerating area and subsequent fibrosis and calcification of the entire diseased lung tissue. This I have not only demonstrated by an overabundance of clinical material—the transformation of instances of ulcerative phthisis into such of fibroid phthisis—but also by direct pathologic evidence on the autopsy table.

The mediate therapeutic effect of the drug is constitutional. It would be mere conjecture to explain the beneficial influence of the solution on the weakened organism beyond that which accrues from its local operation. Still, iodoformic acid seems to influence assimilation and anabolism in an independent and rather direct way, which is evidenced by the facts that the nourishment is better utilized and that the patient begins to gain in weight soon after the treatment is instituted and before any appreciable local changes have been brought about. Such local changes of improvement are, of course, preceded by the, usually early, relief of the symptoms mentioned heretofore.

THE ACCESSORY TREATMENT.

The cases of chronic ulcerative phthisis to which iodoformic acid is administered, apart from a few exceptions, demand but very simple supplementary treatment. Of course, special remedial measures should be prescribed when the various complications urge their employment. This may be necessary in the beginning of the treatment, before any influence of the iodo-formic acid has made itself noticeable. For the cough and pain codein alone or in combination with expectorants may be useful at the outset. During the first weeks of treatment, when the cough demands it, I usually order creosote in one or two drop doses, combined with tr. gentianæ or ess. pepsini, to be taken every second or third hour. After a month or so it will be found that no additional medication is called for as a rule.

The principal accessory treatment consists in the admission of sufficient and good air and in the plentiful ingestion of readily anabolizable material. It goes without saying that mountain air and that of pine forests are best suited for the phthisic. The great majority of instances of phthisis treated by me with the formic acid-iodin solution were clinic cases which could not afford to give up work and to sojourn away from their home for any length of time. They had to get along on city air and they did generally pretty well on it. The patients should be minutely instructed as to the art of breathing, and nasal obstructions interfering with respiration ought to be removed at the earliest opportunity. Lung gymnastics should be practiced a number of times during the day, especially in the morning and evening. These restorative gymnastics may be performed in the open air or in a room with the windows wide open. An air bath of from fifteen to thirty minutes' duration taken at bedtime may prove conducive to a restful sleep and tends to regulate the body heat and to stimulate the skin and the internal organs.

Concerning the nourishment of the consumptive, I can only reiterate what I have said on former occasions.[4] Overfeeding alone does not prevent further bodily decline; it may even give rise to an aggravation of the patient's condition by overburdening the digestive organs and by overproduction of alimentary poisons. It is futile to try to check bodily decline by forced feeding without taking into consideration the organs of digestion and the general assimilatory capacity.

The treatment of the so-called wasting diseases resolves itself in the prevention of waste. The secret of success in the treatment of consumptive affections lies in the proper management of the organs of digestion and assimilation. The most potent factor in maintaining physiologic digestion and assimilation is an adequate food-supply, that is, a nourishment not only sufficient as regards the quantity, but one which the declining organism with its weakened or impaired organs is able to anabolize; one, in other words, which furnishes the needs of the specifically affected and altered organism. If the food is not adapted to the digestive and assimilative capacity of the patient, he will slowly starve, although his food-receiving organs may be filled with ingesta to the point of bursting. (Stern: The Yolk Cure, etc.)

The consumptive receives, as a rule, sufficient amounts of carbohydrates and proteids with his food. What he is in need of is fat, assimilable fat, fat which does not give rise to intestinal irritation, fat which is not objectionable to the taste, fat which may be ingested in large quantities and for a long period. The fat of the yolk of the hen's egg is the only one which fulfills all these desiderata. The details concerning the "yolk cure" will be found in aforementioned papers. On this occasion I only wish to state that yolks should occupy a prominent place in the dietary of the patient affected with chronic ulcerative phthisis. I have found that an ordinary mixed diet in which the fat substances were simply replaced by yolks sufficed in many instances to bring about augmentation of weight and strength. If a patient, who is not in the last stages of phthisis, fails to build up while under the "yolk cure" we may feel almost certain that the latter is not properly executed, that is, the food partaken of, together with the yolks, is either not the right kind or is ingested in amounts not suited to the alimentary condition. When a general improvement of the patient's condition has taken place, it is no longer essential that the yolks form the only fatty ingesta; other fats, in limited amounts, may be added to the diet. If the yolks are taken for a protracted period—which ought to be the rule in any con-

4. Who Is Underfed? Med. Rec., May 21, 1904; and The Yolk-cure in the Treatment of the Underfed, Med. Rec., Dec. 31, 1904.

sumptive disorder—the proportion of the various types of nutritives may and must be altered according to the prevailing alimentary circumstances.

The whole egg may be well tolerated in certain cases; their amount during the day should, however, never exceed five or six on account of renal irritation and alimentary albuminuria which are apt to supervene when larger quantities of eggs are ingested. The frequent occurrence of alimentary albuminuria following the affluent eating of whole eggs (especially when they are in the raw or semi-raw state) ought in itself be sufficient to stop the promiscuous employ of this article of food in the treatment of phthisis. Again, the "idiosyncrasy" for eggs is solely caused by the white of the egg. The argumented evolvement of hydrogen sulphid and ammonia in the alimentary tract when half a dozen or more eggs are consumed during the day is due to the disintegration of the white of the egg and not to that of the yolk.

I have not met with an aversion for yolks in a single case of chronic ulcerative phthisis. From ten to forty yolks may be given during the twenty-four hours. The yolks should not be cooked but may be added raw to warm dishes and beverages. They may be incorporated with almost any foodstuffs, and with many liquids, as soup, milk, coffee, whisky, wines, etc. Variety of combination, incorporation and flavor facilitate the execution of the "yolk cure" and favor its continuation for almost any time.

The ingestion of large amounts of milk as advocated by many phthisiologists is not necessary when the "yolk cure" is being executed. Again, certain quantities of milk (skimmed milk when starting treatment) may be given together with the yolks, provided the patient's alimentary canal is in a proper condition to receive it.

CASE HISTORY.

History.—T. T., aged 18; native of United States, elevator attendant, was referred to me by courtesy of Dr. E. Blasucci Jan. 2, 1907. He complained of weakness, loss of weight, coughing spells, pain in the chest, recurrent slight hemoptysis, fever and anorexia. He had been treated by a number of physicians for the greater part of last year for "chronic bronchitis," but gradually declined. The family history pertaining to phthisis, as far as the patient knew, was negative.

Examination.—The physical examination showed a height of 5 feet 9 inches, illy developed muscles and an emaciated body weighing 117 pounds. The abdominal organs in a physical sense appeared quite normal. The heart in the recumbent position exhibited a very slight friction of the first mitral, and some accentuation of the second tricuspid sound. Pulmonary and aortic sounds seemed normal. The pressure of the right radial artery amounted to 130 mg. Hg, as ascertained by Potain's instrument. The temperature (rectal) was 100.8 F. The chest appeared long and flattened, the ribs, and especially both clavicles, prominent. There was insufficient expansion of and increased tactile fremitus over both apices. Increase of tactile fremitus was also observed at the base of the right lung. Percussion elicited comparative dulness in the clavicular regions and the supraspinous fossæ. Auscultation on deep inspiration revealed bronchial inspiratory murmurs and râles. Expiration was somewhat prolonged, and vocal resonance was increased. The sputum, which was quite scanty in amount, showed the presence of a goodly number of tubercle bacilli.

To allay the bronchial irritation, small doses of creosote (1 drop) in essence of pepsin were given during the first six weeks' treatment. The average number of yolks consumed per day was fifteen. The abbreviated table, in the opposite column, of the result of treatment is self-explanatory.

Subsequent History.—Examination of the chest March 4 showed improved expansion of its middle and lower portions. The tactile fremitus, distinctly more pronounced on the right than on the left side of the thorax, was a good deal less on both sides than on the first examination. The increase of tactile fremitus at the base of the right lung had continued at about the same degree. The dulness had remained unchanged in area and pitch. Expiration still appeared prolonged and vocal resonance increased. Light bronchial inspiratory murmurs and râles could be elicited.

April 19 the patient was presented before the Manhattan Clinical Society and examined by Drs. Morrissey and Reilly. They reported to the society that the apical expansion was diminished, that there existed a tympanitic-deadened sound over the apices, especially on the right side, and that there was on the same side diminished respiratory murmur and some harsh vesicular murmurs over the left lung. They expressed the opinion that the condition had become quiescent and that shrinking of the lung tissue and fibrous tissue formation in the walls of small cavities, situated in the apices, had taken place.

May 4 an examination by the Roentgen ray did not reveal any positive data, and auscultation, performed on the same day, demonstrated expiratory movements of normal duration and nothing abnormal besides some slight friction sounds over the right apex.

May 26 the auscultatory findings were about the same as on the previous examination.

June 24 abnormal sounds in the lungs could no longer be detected.

The patient returned to his work March 31 and continued to work without interruption. He now occupies a much more responsible position than formerly. He is in the open air whenever he has occasion to be. He performs his lung gymnastics several times during the day. He feels very well, is quite strong, continues to gain in weight and resistance and was not at all affected by the hot weather in June and July. The patient continues under treatment.

TABLE SHOWING DETAILED RESULTS OF TREATMENT.

Date 1907.	No. drops sol. inject	Rectal temperature, F.	Sweating.	Pain.	Cough.	Expectoration.	Tubercle Bacilli.	Weight in pounds.	Remarks.
Jan. 2.		100.8	++	+	+++	+	++	117	18 hrs. in bed, 6 hrs. in open air daily.
Jan. 4.	20	100.8	++	+	+++	+			
Jan. 6.	20	99.8	++	+	+++	+			
Jan. 9.	20	99.6	+	+	+++	+		123¾	
Jan. 12.	20	99.6	+	—	+	+		127	In country, open air.
Jan. 17.	20	99.8	+	—	—	+	++	130¼	
Jan. 22.	30	99.6	+	—	—	+		130½	In bed 12 hours, in open air 10 hours.
Feb. 3.	30	99.0	+	—	—	—		132	Every week one or two days in country; always in open air from 9 a.m. to 5 p.m.
Mar. 21.	30	99.3	—	+	—	—		138	
Mar. 31.	20	99.6	—	—	—	—		139	Temporary permission to return to work.
May 1.	40	99.6	—	—	—	—		143	Working without interruption.
June 3.	30	99.0	—	—	—	—		146	
July 18.	40	99.4	—	—	—	—		148	
July 27.	40	99.4	—	—	—	—		142¼	Worry over business troubles of father.
Aug. 5.	40	99.4	—	—	—	—		147¼	Works in father's store.

Explanation of the symbols used in table: — absent; + present in a minor degree; ++ present to larger extent; +++ present in highest degree.

Specific Urethritis.—In *Central States Medical Monitor*, N. E. Aronstam states that gonococcic urethritis is no longer regarded as a mere local affection; it is beyond doubt a far-reaching constitutional disease, and the practitioner is committing a criminal offense against his patient as well as against the integrity of society at large, by intimating to the patient that this malady is not worse than a "cold." Such laxity betrays an unpardonable gross ignorance on the part of the physician

Clinical Notes

GENERAL SEPTICEMIA TREATED BY BACTERIOTHERAPY.

BY WRIGHT'S METHOD OF ESTIMATING THE OPSONIC INDEX AND INOCULATION BY A VACCINE PREPARED FROM ORGANISMS FOUND IN THE PATIENT'S BLOOD.

G. MARTYN, M.D.
LOS ANGELES, CAL.

The patient, a young married woman of 27 years, was seen by me in consultation with Dr. J. Park Dougall, on Nov. 1, 1907. Her previous history is as follows:

On December 7, 1906, she had a miscarriage at the seventh month of pregnancy, the fetus being dead. On October 21, 1907, Dr. Dougall was called to find another miscarriage threatening; fetal movement was apparent until the 26th. On the 27th, hemorrhage occurred, with loss of amniotic fluid, and labor pains coming on, she was delivered of a dead fetus extremely ecchymosed. The placenta and membrane came away naturally within an hour. The lochia were normal up to the 30th, with temperature 99. On that date the patient had a rigor, followed by a temperature of 102 and suppression of lochia. Curettement was done thoroughly at once, and the uterine cavity was swabbed out with carbol and iodin, frequent douches of 1 to 1,000 biniodid of mercury being given.

Combined temperature and opsonic chart in a case of general septicemia.

During the night the patient was very prostate, and the temperature rose to 103, with delirium and thready pulse. Strychnin was given hypodermically, on the morning of the 31st, the uterus was again curetted, and 10 c.c. of antistreptococcic serum injected, a general septicemia having developed. During that night, strychnin and brandy were given, but notwithstanding this the temperature on the morning of November 1 was 104, with great prostration.

Dr. Dougall then asked me to see her, with the hope that possibly the use of a homologous serum, used in conjunction with the opsonic index, might be beneficial. I found the patient difficult to rouse, with a rectal temperature of 104, and pulse correspondingly rapid. An examination of the chest and heart showed nothing abnormal and the urine contained no albumin. She was wandering mentally, and had well marked rigors. There seemed to be no pain on palpation of the abdomen, and the discharge per vagina was slight, but sour in odor. Three agar cultures were made, each one from scrapings of the uterine cavity; from blood withdrawn from the median basilic vein, and from blood drawn immediately after a rigor, under strictly antiseptic precautions. Frequent douches of 1 to 1000 biniodid of mercury were given, and the bowels kept open.

Realizing that this was probably a case of streptococcus infection, and the serum used the day before having no effect, 10 c.c. of polyvalent antistreptococcic serum were injected, but no appreciable effect, either on the temperature or comfort of the patient was noticeable.

On the morning of November 2 a troublesome cough with mucous secretion tinged with blood, was first noticed, and on examining the chest well marked scattered râles were found. There was a tricuspid murmur with pulsation of the veins in the neck; also marked enlargement and tenderness over the liver. The patient was steadily growing worse and 10 c.c. of polyvalent antistreptococcic serum were now injected, the temperature then being 104 and pulse 126. This also produced no beneficent effect. In the evening the patient's temperature was 104.6, pulse 134. Another 10 c.c. of serum were injected. The patient was very weak and rambling, nourishment being administered with extreme difficulty. Brandy, strychnin and strophanthus were given freely.

On this morning, Culture No. 1, from the uterus, showed a luxuriant growth which, on examination, proved to be a mixed growth of staphylococci and streptococci. Culture No. 2 showed a very slight growth of streptococci; Culture No. 3 showed a luxuriant growth of streptococci. The patient's opsonic index to this streptococcus was 0.4. No doubt was now entertained that the toxemia was due to this organism, and a vaccine was accordingly made from this growth following Wright's method.

November 3, at 9:30 a. m., I injected 10,000,000 dead and sterilized streptococci. At that time the pulse was very flickering, the extremities were cold, color dusky, with hectic patches on the cheeks. The injection was made in the abdominal wall, the opsonic index then being 0.4. Forty grains of citric acid were given every four hours; at noon the temperature was 103 F. and by the evening of that day it had fallen to 100.6. The opsonic index had risen to 1.2. The patient took nourishment well, and was conscious. At times the pulse became very flickering, but brandy and strychnin invariably carried her over. The next day the opsonic index had risen to 2.0, the flood tide of the positive phase, and her temperature had come down to 100.8. On the 5th, the index dropped 0.9. The patient's general condition was not favorable; she remained in a low asthenic condition, and therefore another injection of 10,000,000 dead and sterilized streptococci was given. At 9 o'clock the next day the temperature was 99.6 and opsonic index had dropped to 0.7. At 3 p. m. the temperature was 102.6, and the general condition was anything but satisfactory. An injection of 12,500,000 was given at once. The temperature by midnight was 99.8.

On the 7th, the opsonic index had risen to 1.1, and the average temperature of the day was 100. On the 8th, the opsonic index had risen to 1.5, and the temperature had fallen to 98.6. The cough and expectoration had gradually decreased; the tricuspid murmur also disappeared, and the liver, though slightly enlarged, was not tender to palpation. The mental condition, which had been of low typhoid type from the 2d to 5th, began to clear on the 6th, and by the 9th she was quite herself, taking nourishment well. The citric acid was stopped, and a more fluid diet given. From the 3d to the 9th the fluids had been restricted in accordance with Dr. Lawson's researches on the excretion of the opsonins. He has proved that both by sweat and urine the opsonins are freely excreted in an inverse ratio to the amount in the blood.

On the 10th the opsonic index reached the full tide, namely 2.0, the same as on the 4th, the temperature being 99.6. On the 12th the opsonic index was 1.6, a much more gradual fall being shown in this curve, as on the morning of the 13th, the index had fallen to 1.2. I gave an injection of 5,000,000. This had the desired effect, and on the 14th the index again registered 1.6. From this point on the patient steadily improved, the temperature coming down gradually, the opsonic curve also slowly pursuing its course to normal. Convalescence was un-

eventful; the dilated heart returned to its normal size and the murmur disappeared.

This case presents many points of interest. I believe it is the first case of general septic infection in California treated by Wright's method, closely using the opsonic index as a guide to the use of the vaccine.

The attitude of the medical profession to serum therapy and its special technic is, and rightly has been, one of cold scientific conservatism. Facts alone speak; all else must be rejected unhesitatingly. Those of us who have seen Wright's work in London can have no doubt as to the large field of usefulness it has opened up. Disappointments we shall have, but I am convinced it will be rather the pupil's error in technic than a failure in the master's theories and facts.

There are three points in this case to which I wish to draw special attention:

1. The cough, expectoration and endocarditis which appeared on the 2d are interesting as showing the attempt nature herself makes at repair; namely, the excretion of toxic material through the mucous and endothelial membranes, with their consequent irritation.

2. The almost complete failure to isolate an organism from blood culture No. 2, whereas No. 3, taken immediately after a rigor, gave a luxuriant growth. This teaches an important lesson in blood culture during septic cases and the mixed infection of pulmonary origin.

3. The absolute failure of the commercial polyvalent sera, three of them being tried on consecutive days, the temperature gradually rising and the general condition of the patient rapidly growing more serious. There are undoubtedly many families of streptococci and the success of the homologous, as ofttimes the failure of the commercial sera undoubtedly is due to the fact that in Wright's method the vaccine is made from the identical family causing the toxic symptoms; whereas with the commercial sera it is just a chance whether that particular family of germs is represented in the serum.

In the combined temperature and opsonic chart shown the daily temperature marked is the average of the day taken every two hours.

A CASE OF EPIDERMOID CARCINOMA OF THE INFERIOR MAXILLA.*

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BOSTON.

According to Mikulicz and Kummel in their work entitled "Die Krankheiten des Mundes," there are two kinds of carcinoma which occur in connection with the maxillæ. 1. The flat, superficial epithelial carcinoma arising from the mucous membrane of the alveolar processes. 2. The carcinoma which makes its appearance first in the body of the maxillary bone. The above authors say:

The few cases of carcinoma of the alveolar processes which we have had the opportunity to see, came under observation during an advanced stage, so that no definite statement could be made as to their beginnings. It appears that the lesions of the mucous membrane made by the extraction of carious teeth gave the first impetus to the development of carcinoma. We find in the later stages the alveolar processes (the teeth are usually absent in the affected area) covered by an irregularly circumscribed swelling, usually much notched and bleeding easily. The boundaries of this swelling are by the eye and finger differentiated from the surrounding parts as a firm rim. At first the form of the alveolar process is retained; later the bone is transformed more and more into the cancerous mass, and finally the loss of substance of the maxilla through the ulcerating tumor becomes evident.

It is the object of the present paper to give the clinical history of a case of epidermoid carcinoma arising from the mucous membrane covering the inferior maxilla and to be classed under the first kind mentioned by the authorities above quoted.

Patient.—A woman, aged about 65, whom I was called to see in order to relieve discomfort, which was supposed by the patient and her family to be caused by the teeth.

Examination.—On the outside of the face there was seen a swelling over the body of the left inferior maxilla half way between the angle and the symphysis. The swelling was as large as the half of an English walnut; it was not sore to touch, and the submaxillary glands were not enlarged. The patient stated that about three months previously she had noticed something unusual in her mouth. On examination of the oral cavity the lower jaw was found to be edentulous on both sides from the first bicuspids back to and including the third molars. The teeth had been absent in these areas for a number of years and the alveolar processes had become entirely absorbed. The teeth from the right inferior bicuspid to left inferior bicuspid were badly decayed and broken down. Of these such as had rough edges were extracted at the first visit. On the left lower side of the jaw, extending from the first bicuspid region to the third molar region, could be seen an oblong buttonhole-like opening, the long sides of which were separated about five-eighths of an inch. On retraction of the buccal wall and opening wide the lips of the buttonhole aperture, a pocket was disclosed the base of which extended along the median line of the inferior maxillary bone from the third molar region to first bicuspid region, and included the external side of inferior maxillary bone and was reflected upward along the buccal mucous membrane. There were distinct prolongations at the extreme posterior part of the floor of this pocket and at the extreme anterior portion. The floor of this pocket when first seen was covered with a grayish film which suggested necrosis. When, however, this film was removed the floor of the pocket was found covered with a soft, easily bleeding tissue, and necrosis was considered improbable. After an interval of three days the patient was seen again and the affected parts washed out with a weak cresol solution, and arrangements were made for the washing out of the pocket after each meal. At a third visit a careful examination eliminated necrosis and any disturbance from the roots of the teeth. Induration of the buccal floor of the pocket was found to be marked. There was also marked induration of the buccal lip of the external opening. The submaxillary glands were not enlarged. The patient complained of some pain at night. A diagnosis of probable epithelioma was made.

Microscopic Findings.—Two small pieces of tissue were removed from the growth where it seemed active, also a scraping taken from the floor of the pocket. These specimens were sent to a pathologist for examination. The following report was received: Microscopic examination shows beneath the surface epidermis masses of epithelium containing numerous epithelial pearls. Occasional mitotic figures found, indicating fairly rapid growth. Between the masses of epithelium is a small amount of stroma infiltrated with numerous cells of inflammatory origin.

Diagnosis.—Epidermoid carcinoma.

Operation.—When the case had been clearly diagnosed a general surgeon was called in. He advised and performed a radical operation for the removal of the carcinoma and surrounding tissues. The operation was performed by an external incision from corner of mouth to angle of jaw. The oral cavity was thus opened. The left half of the inferior maxilla was freed from its muscular attachments, the bone was sawed through at the symphysis, then everted and disarticulated. The submaxillary glands were then removed.

* Read in the Section on Stomatology of the American Medical Association, at the Fifty-eighth Annual Session, held at Atlantic City, June, 1907.

The patient did well for twenty-four hours; then suddenly the heart failed and she died on the second day after the operation.

There are several points which are emphasized by a case of this kind.

1. The importance of a thorough oral examination by the dentist of every new case which comes into his hands. This examination should start with the pharynx, include the pillars of the fauces, the tonsils, the soft and hard palate, the tongue on all sides and the oral mucous membrane. Such an examination can easily and quickly be made by using a wooden mouth spatula.

By such examinations the dentist is in a better position than any one else to discover the beginnings of new formations in the oral cavity as well as other lesions. The general practitioner commonly examines the oral cavity only when the patient has found something so unusual as to cause alarm.

The dentist, by means of his frequent access to the oral cavity, can exercise supervision over its territory and give early notice of whatever is going wrong. Unfortunately, most dentists fail to make a complete examination of the oral cavity of each patient and are satisfied to view the very limited area on which they are operating. The welfare of our patients demands a more thorough and intelligent treatment at our hands, for when serious new growths occur in the mouth there is hope of a cure only when diagnosed in the very early stages, at a time when they may not be noticeable to the patients themselves.

2. The dental practitioner should have a sufficient knowledge of dental pathology to enable him to recognize lesions in the oral cavity when they are present. It is commonly said that for the dental practitioner manual skill in repairing the destructions of caries is the all-important thing. But it is evident in view of cases of the kind now under consideration that the intellectual, scientific side of the profession needs in a large degree to be developed if we are to make the most of the opportunities which a frequent inspection of the oral cavity brings us. Without such development of the scientific side of the profession the dentist will fail to be of service to his patient at a time when not the contour of his tooth is at stake but his very life.

DISCUSSION.

DR. V. A. LATHAM, Chicago, thought that the caries of the teeth in Dr. Potter's case was due to narcotic poisons and toxins generated, perhaps, by the new growth. She emphasized the necessity of a very critical examination of anything that verges on hypertrophy of the tissue and on hyperplasia. In those cases where the third molar is irritated there is a prolongation of the epithelium on the point which rises up and becomes irritated, showing a growth in and out, and it is a very common seat of carcinoma, and dangerous on account of spreading by contiguity which has often been denied as a method of growth. Dr. Latham agreed with Dr. Potter that if the patient had been seen earlier in all probability he would have been alive to-day.

DR. E. A. BOGUE, New York City, congratulated Dr. Potter for calling attention to, not only the possibility, but also the urgent necessity, for the careful physical examination of the mouth—the entire oral cavity.

DR. JAMES E. POWER, Providence, R. I., also emphasized the importance of a thorough examination and advocated the special skill of the pathologist in such cases, because it is impossible for any man to be sure of his diagnosis in every case of malignant disease. It is one of the duties physicians owe the patient, and justice demands that the patient be given the benefit of every method devised by science, either in the diagnosis or treatment of a case. Another question that suggested itself to Dr. Power concerning carcinoma is, where are such cases inoperable? He thought that in the case cited the disease had progressed so far that operation meant death in 24 hours. Three, four or five days in the length of a patient's life will sometimes mean a great deal from a legal standpoint. That is, a number of things could be transacted in that length of time by the individual that would simplify the future condition and future work of the relatives of that patient. In some cases an operation reduces the life of the patient, and in such cases nothing is gained, especially when the operator knows that the patient will die, whether he is operated on or not. Dr. Power has made it a rule to regard all growths in the mouth as malignant until it is proved that they are not. To be positive, even where it is malignant, he has the pathologist make the examination of the specimen, and in many instances, he does not decide the question of malignancy from one examination or from one report of the pathologist. If he is reasonably sure from the general appearance of this tumor that it is malignant, and if he gets a negative report from the pathologist, it is, he thought, reasonable to suppose that he may not have got the tissue which was involved. Another specimen, and still another specimen, is submitted, until the true condition of the growth is determined. Dr. Power emphasized the importance of the early recognition of this condition, when the aid of the pathologist should be solicited, and no man, he said, regardless of his experience, should decide positively whether or not a growth is malignant until the special skill and scientific knowledge of men who are engaged in this line of special work determines, or assists in determining, this most important question.

DR. M. I. SCHAMBERG, New York City, referred to a case in which he operated recently for a malignant growth involving the submaxillary region, which started from the mucous membrane of the mouth and passed down through and affected the root socket, causing a partial erosion. Very recently he saw three cases of epulis. One specimen was a growth as to which the pathologist gave a negative report, in the first place, concerning malignancy; but the second report, after submitting other sections cut from the same growth, proved the growth to be malignant. Two out of three of the epuli were malignant growths. Dr. Schamberg pointed out that early operation would effect a more thorough removal of the growth, otherwise the chance for an ultimate, absolute cure is a remote one. Dr. Schamberg sounds a note of warning against the view which many general surgeons take, that many lesions of the mouth are of major importance. Dentists know that these minor conditions, such as alveolar abscesses or a fungoid or hypertrophied membrane about the orifice of a fistula, may be amusing to them. He referred to a case which, had it fallen into the hands of a general surgeon would, he thought, have been practiced on for malignant tumor, whereas it was a case of an encysted tooth which was located by means of the radiograph. The symptoms in the case, the peculiar color of the patient, the involvement of the submaxillary lymph nodes, and everything in the case, pointed toward the presence of a malignant growth, whereas it was merely an encysted tooth. He also advised very careful examination of tissues removed from the mouth because granulation tissue may be mistaken for a sarcoma.

DR. WILLIAM H. POTTER, Boston, Mass., stated that the dentist has an extraordinary opportunity to observe the pathology of the mouth and yet he does not, as a rule, utilize that opportunity. It is possible for him to work for hours over a portion of a tooth and yet know absolutely nothing of the general condition of the oral cavity. He urges the use of wooden mouth spatulæ in the examination of patients, because they open up the oral cavity for examination much better than mouth mirrors.

Disturbances in Vision in Connection with Constitutional Affections.—Zehden discussed in the *Therapeutische Monatshefte* for January, 1907, the visual disturbances that may accompany posthemorrhagic, simple or pernicious anemia, chlorosis, leukemia, diabetes and gout. He warns against specialists treating the visual disturbances without regard to the constitutional trouble.

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POTASSIUM CYANID POISONING.

J. W. NOLAN, M.D.
CHITTABALBIE, KOREA.

Cyanid of potassium poisoning is not infrequent among workmen who "clean up" in the cyaniding process of gold reduction, but is rare in private practice.

After the auriferous ore has been crushed to a fine sand through which an 0.5 per cent. solution of cyanid of potassium is allowed to filter, the solution passes into boxes filled with zinc shavings on which gold is precipitated from the auro-potassic cyanid in the solution. It requires some little force to dislodge these gold particles, and consequently scrubbing the zinc shavings with the hands is the method usually employed. It is in this scrubbing process, while the hands and arms are necessarily bathed in the solution that poisoning occurs with greatest frequency. Different individuals exhibit different degrees of susceptibility, some being apparently immune. The temperature of the solution greatly modifies the ease with which the effect is produced, the greatest number of cases occurring during the cold season when the solution is, of course, very cold.

CASE 1.—A husky young man of 23 was having his first experience in scrubbing the zinc shavings. An itching sensation immediately followed the immersion of his hands in the solution. Scarlet specks soon appeared, irregularly distributed over the area with which the solution was in contact. These scarlet specks quickly enlarged until a well defined circumscribed area was produced, these finally coalescing and forming a large scarlet area, but the initial specks or papules maintained their identity, being slightly elevated and of a deeper color than the neighboring skin. The itching continued for about two hours and a burning, uneasy sensation developed which persisted until the redness began to disappear, twelve hours later. Slight giddiness and headache were the only constitutional symptoms.

A similar case occurred in a well-nourished metallurgist. I put the hands and arms of these patients into a very dilute solution of hot sulphuric acid for several minutes every hour. The redness soon began to fade and had disappeared altogether in twelve hours. The following formula shows the chemical reaction:

$$H_2SO_4 + 2\,KCN = 2\,HCN + K_2SO_4$$

The prussic acid evaporates and is absorbed and eliminated rapidly and the heat facilitates the absorption and elimination of the sulphate of potassium.

A CONVENIENT WAY OF KEEPING TAB WHEN COUNTING IN OPSONIC WORK.

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One of the drawbacks to opsonic index work is the large amount of very trying microscopic work required. Anything that would tend to reduce this time or the strain on the eyes would seem of value. Simon has proposed a technic according to which the percentage of phagocyting leucocytes is ascertained, no account being taken of the number of bacteria per leucocyte.

The following suggestion will apply whether the original technic of Wright and Douglas is used or Simon's, with slight adjustment to the particular case. When counting in determining the Wright index, one observes the number of bacteria in each of several leucocytes, carrying the separate numbers "in his head" until he has as many as he can carry, say five to ten; then he jots them down, thus: 1, 2, 0, 5, 0, 0, 1, 0, 4, 2, etc., and after a sufficient number has been counted, the figures are added up and the calculations made. I take it that the most trying part on the eye is the frequent accommodation and reaccommodation of the eye to the microscopic field and tab figures, etc., as well as to the very different amounts and often qualities of light. I believe this is largely obviated by a method which has been used in my laboratory for several months.

A box containing 50 or 100 beans or beads (I use 50 beans) and a similar empty box (the boxes in which microscope slides come answer well) are placed on the table, at convenient places, on the right of the microscope. A handful of beans is taken up in the right hand, with which the mechanical stage is manipulated, and one bean is dropped into the empty box for each polymorphonuclear leucocyte observed, the left hand manipulating the fine adjustment, as usual. One counts the bacteria as observed; for example, with the above he would say: 1, 3, 8, 9, 13, 15, etc., until the box is empty. The number counted would be the number in 50 cells. There is no putting down and adding up of figures and the eye has not been removed from the field during the time. If more than 50 cells are to be counted, put down the number, or carry it on, as you preferred, exchange the position of the boxes and proceed as before.

When counting the phagocyting cells only for the Simon index, one may proceed as before, dropping a counter for each "poly" seen and counting as one goes, only those cells phagocyting, as 1, 2, 3, 4, 5, 6, etc. If 100 counters are used, the number counted phagocyting would be the percentage of phagocyting leucocytes.

If one does not use a mechanical stage he can modify the above to suit his convenience.

Crude as the method seems, only a trial is necessary to convince one of the advantages in time and eye saving.

A DISPLACED SIGMOID IN A CASE OF APPENDICITIS.

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FORT COLLINS, COLO.

The following case is an interesting one because of the position of the sigmoid and the failure of the usual rule for finding the appendix, that of following the longitudinal muscular band of the presenting large intestine to its pelvic end:

Patient.—J. A., aged 35, a lather by trade, was referred to me by a physician in a neighboring town with a diagnosis of appendicitis. The history was the usual one of an acute attack in mild form lasting four days with no improvement. Examination showed tenderness over McBurney's point with muscular rigidity; temperature was normal and pulse 85.

Operation.—In operating, the gridiron incision was used and the large intestine immediately presented itself in the wound. It was drawn out from the pelvic end, following the longitudinal band of muscular fibers, and search was made for the appendix. The lower end of the intestine seemed so deep in the pelvis that suspicions were aroused and the introduction of a rectal tube showed this portion of the intestine to be the sigmoid instead of the cecum. Tracing it upward, it was found that instead of going up to the liver region, as might be expected in a case of inverted viscera, the colon went across to the splenic region. The sigmoid was dropped and the opening enlarged so that the abdominal cavity could be inspected more freely, and the cecum with the inflamed appendix was seen lying up under the liver. The appendix was removed and the recovery was uneventful.

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[For other information see second page following reading matter.]

SATURDAY, FEBRUARY 1, 1908.

PHYSICIANS AND VIVISECTION LEGISLATION.

The endeavor now being made in the State of New York to secure the adhesion of the medical profession to a legislative bill providing for governmental regulation of experiments on animals, brings clearly before physicians the question of the attitude they should assume toward such legislation in general. No one competent to treat those suffering from disease can deny the overwhelming value to medical practice of the results of animal experimentation, for a physician seldom prescribes for a patient without making use of the knowledge thus gained. Nevertheless, the question is occasionally presented to members of our profession, and is listened to receptively, especially by those who are not familiar with antivivisection agitation: May it not be advisable to support moderate specific legislative control beyond that which is obtained through the customary laws relating to cruelty to animals in general?

In a democracy there are two criteria for restrictive legislation, namely, past abuse of liberty, and demand of public opinion, and it may be well to apply these tests here. The history of experimentation on animals in the United States affords overwhelming proof that the privileges of this method have not been abused.

Almost without exception those whose tastes lead them into the scientific work of laboratories are men of high ideals and broad sympathies: and those who investigate living organisms are no exception to this rule. The deliberate infliction of wanton cruelty on organisms is neither their desire nor their practice. What they have done in this country in the past does not give support to the view that their work in the future ought to be restricted by law. Nor does public opinion demand such legislation. The great body of the people, in so far as their views are expressed privately, are not in sympathy with it. They recognize the necessity of this method of research, and while abhorring cruelty in general they are willing to trust the men who direct and perform experiments, as they trust their own physicians. There never has been exhibited in this country any evidence of allegiance to the notion of restrictive legislation save in the case of a very few. Whenever there has been agitation it has been carried on by single individuals or small groups of individuals, who frequently have shown the characteristic symptoms of a mild psychoneurosis, and whose zeal has been disproportionate to the balanced judgment of the masses. Thus, where neither past experience nor the people demand legislation, such legislation should not be enacted. Thus far, the good sense of our legislators has prevented the enactment of specific antivivisection measures. The first attempt of the kind was made in the state of New York in 1867. Further attempts were made in that state up to 1883, after which the matter slumbered there for twenty-four years. Last year, in New York, a bill was introduced, and this year one has already appeared, while a sponsor for a second is being sought. Various bills have at times been brought before the legislatures of Massachusetts and Pennsylvania, and similar legislation has twice been attempted in Illinois. A notable attempt to restrict experimentation in the District of Columbia was made in the Senate of the United States in 1900. All of these attempts, without exception, have failed, and in no state is legitimate experimentation hampered. It is interesting to contrast with this record the example of England—the only country, so far as we know, in which such restrictive laws have been enacted—where, in 1876, a very obstructive bill was introduced into Parliament. A great deal of testimony was taken, there was general agitation of the subject, and, largely owing to the compromising spirit of scientific men and the medical profession, the bill was allowed to go through.

A few years ago Lord Lister said of this law: "Our law on this subject should never have been passed, and ought to be repealed. It serves no good purpose and interferes seriously with inquiries which are of paramount importance to mankind."

Sir Lauder Brunton says of it: "The passage of the antivivisection act in this country has interfered to an enormous extent with physiologic work, and in order to do some of my investigations, the object of which was simply to find out what the action of certain medicines was, that one might apply them to the relief of suffering mankind, I have been obliged to go to Paris to carry on my research in a foreign laboratory."

The distinguished physiologist, Sir Michael Foster, wrote in 1890 to a professor in an American university as follows, of the effect of the English law: "Men go out of England to do particular experiments, and undoubtedly the act prevents men staying in England, or coming to England to carry on research requiring vivisection. . . . I have always said, and always shall say, that the necessity of a restrictive law has never been shown. The English commission failed to demonstrate any abuse such as could justify the measures adopted, and from what I know of America and Americans, I am confident that no such laws are needed with you. Indeed, my objections to the act as a politician are quite as strong as my objections as a physiologist. The act is stamped with that mark of bad statesmanship, meddlesomeness. . . . If the time were to come

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over again I would fight tooth and nail against any act at all, on the ground that all such legislative restrictions are unnecessary; that instances of cruelty—that is, of heedless causing of pain on the part of physiologists—are to say the least, rare, and that public opinion, aided by the ordinary law, is quite sufficient to cope with such cases. . . . My advice to you is, accept no compromise whatever; refuse to admit for a moment the need of such a law, and fight against it everywhere." Undoubtedly the law in question has greatly hampered the advance of medical science and education in Great Britain.

In view of what is here said it ought to be clear that physicians should continue to present a united front in opposition to specific legislation providing for the regulation of experiments on animals. Foster's advice to "accept no compromise whatever" ought to be heeded. It would be a sorry day for American medicine and physiology if legislation of this nature were to be enacted.

CONGENITAL OR IDIOPATHIC MEGACOLON.

The term congenital or idiopathic megacolon carries with it a definite meaning that will have considerable significance to any medical man at first sight, and yet many medical writers persist in using the meaningless synonym "Hirschsprung's disease;" and this is especially true of our German colleagues, who delight in this method of nomenclature. Furthermore, about a round dozen of these cases had been described before Hirschsprung made the subject more familiar in 1886. At present the total number of cases recorded in the current literature is not far from 150, including several reported in America, and the entire literature has been worked over recently by C. Löwenstein.[1] It seems probable, however, that this remarkable condition is not so rare as the above figures indicate, for probably the diagnosis is often not made in spite of the extremely striking features that characterize the disease.

The essential anatomic condition is a most extreme dilatation of the colon, or of some segment of it, often associated with more or less hypertrophy of the walls, and when this enormous enlargement of the colon exists in an infant or young child, which is the typical occurrence, the anatomic and clinical pictures are both so remarkable as to attract immediate attention. The majority of these cases present the following features: The patient suffers from long periods of constipation or obstipation, accompanied by an extraordinary distension of the abdomen, with pain and distress not only in the abdomen but also in the thoracic organs which are compressed by the distended bowel. Often the violent peristalsis of the hypertrophied colon is a conspicuous phenomenon, and the superficial veins may become distended to relieve the compressed intra-abdominal veins. Emptying of the rectum by whatever means affords great but temporary relief, and the prognosis is serious, especially in the congenital cases. At autopsy the distended part of the bowel, which not infrequently is the entire colon, is found filled with great masses of feces and large volumes of foul gases, and the walls are usually more or less thickened, but on neither the outside nor the inside of the bowel can be found any obstruction that explains the development of the distension and obstipation.

Hirschsprung considers this condition to be a disease *sui generis*, which results from either a fetal disease or a developmental anomaly in the nature of a "partial giant growth." Later writers have suggested that the dilatation is the result of an obstruction caused by an abnormal length and looping of the sigmoid flexure, while others have thought that abnormal valvular folds in the rectum are responsible. Löwenstein believes that the cases of megacolon in the literature should be grouped in two classes: 1. True congenital or idiopathic megacolon, the typical "Hirschsprung's disease." This form probably results from a congenital ectasia and hypertrophy of the entire colon or of certain portions, which may include the rectum; it is extremely rare, usually begins to manifest itself immediately after birth, and the prognosis is unfavorable. 2. Pseudomegacolon, which results from abnormal loopings and abnormal length of the colon, especially of the sigmoid flexure. This form may begin either immediately after birth or in later years, and there exist all transitions between this condition and the simple chronic obstipation of infancy. The pseudomegacolon type has a much more favorable prognosis, being often relieved or even cured by physical and dietetic treatment. Not infrequently, however, it is necessary to utilize radical surgical procedure, such as inguinal colostomy, enteroanastomosis, or resection of the dilated part of the bowel when this is possible; in the congenital form relief is seldom to be procured except by surgical means.

1. Centrbl. f. allg. Pathol., 1907, xviii, 929.

PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

The Annual Report of the Surgeon-General of the Public Health and Marine-Hospital Service for 1907 has just been received. A comparison of these annual reports shows a steady and continuous broadening of the functions of this service, each year developing more work that relates directly to the public health of the nation, as compared with its original functions as the Marine-Hospital Service, those pertaining to the quarantine, and the care of the merchant marine. During the past year the work of the bureau has covered investigations into hook-worm disease, plague, tuberculosis, typhoid fever, milk supply, etc. Among its important functions, as it relates directly to medical practice, is supervision of the manufacture of vaccines, such as diphtheria antitoxin, antistreptococcus serum and antity-

phoid serum. In conducting this work, not only are the establishments putting out these products under more or less continuous supervision, but products bought in the open market in various parts of the country are continually being tested, thus guaranteeing pure and standard products.

The work of the Hygienic Laboratory is gradually being extended, although not so rapidly as is desirable or as is necessary in the interest of public health, for the reason that a sufficient appropriation is not made. As is the case with most of our state legislatures, Congress is not at all liberal in making appropriations to be used in the interest of public health, no matter how liberal it may be in using the public's money for other purposes.

The medical personnel of the service consists only of 118 commissioned medical officers, three special scientists in the Hygienic Laboratory and 255 acting assistant surgeons. This is entirely inadequate, as the report says, "considering the enlarged activities on which the service is rapidly entering in response to public demand and the public health necessities of a growing country." The following reference is made to the work of the Council on Pharmacy and Chemistry: "The chief of the division of pharmacology is a member of the Council on Pharmacy and Chemistry of the American Medical Association. The important work done by this council and the Association in correcting some of the evils of patent and proprietary medicines is generally recognized. Some flagrant frauds have been exposed, and the profession and the public have been informed that some of the medicines widely advertised as harmless contain dangerous substances, while others claiming powerful action consist of inert and harmless mixtures."

WHAT CONSTITUTES THE PRACTICE OF MEDICINE?

The entire difficulty that has sprung up about what would seem to be one of the simplest of questions arises, as almost all such difficulties do arise, from a lack of attention to the history of the thing, as exemplified in the etymology of the name by which it is known.

There is undoubtedly a widespread idea that the "practice of medicine" derives its name from the custom of administering so-called "medicines." On more than one occasion this idea has found direct expression, or has been sustained by implication, by persons intelligent and learned enough to occupy judicial positions. This view is well exemplified in a passage quoted by an exchange[1] from a New York daily paper. The latter, speaking of the remarkable feat of Edward Payson Weston, in walking, at the age of 69, from Portland, Me., to Chicago, in less than a month, says: "But the old man's fine example as an exponent of the life of simple diet and fresh air ought to make a peculiar and effective appeal to millions who now pin their faith *to drugs and to doctors*" (italics ours). On this the *New York State Journal of Medicine* aptly comments: "The remarkable feature of this editorial is in the implication that healthful, wholesome living is not related to the medical profession so much as drugs are."

Yet a moment's reflection will show that this view is merely putting the cart before the horse. The Latin word, *medeor,* signifies to relieve, amend, correct or restore, "to heal." (The term has its origin in the verbal root, *med,* or *madh,* common in both Latin and Greek, the radical significance of which is to take thought for, to exercise care concerning—*cf.* Greek μέδομαι, μέδεων, μέδω also μήδομαι, μήδεα, and Latin, *remedium, meditari,* etc.) From *medeor* is derived the adjective *medicus,* pertaining to healing, and, when used substantively (*homo* being understood), a healer, or, as we now say, a physician. From the adjective *medicus* are further derived the verbs *medico* and *medicor,* also the adjective *medicinus,* the feminine form of which, *medicina* (*ars*), gives us the art or practice of medicine, and, finally, *medicina* (*res*), a thing pertaining to the art of healing, a remedy. So that, instead of the practice of medicine being so called from its consisting in the administration or application of drugs called "medicines," it is from their being used as part, indeed formerly the chief part, of the practice of the healing art (*medicina*) that these drugs have acquired their name of "medicines." To argue, then, that the practice of medicine means the practice of administering "medicines" is about on a par with arguing that a notice, "Shooting is prohibited," does not prohibit the use of a rifle, a pistol, a bow and arrow, an air gun, or any other propulsive instrument used for killing, so long as "shot"—in the sense of the small round pellets generally understood by that term—are not used.

What, then, does constitute the practice of medicine? According to philology, logic, and common sense, it is simply the art of healing, either as a recognized occupation for pay, or even as a recurring event without pay, when, as it is commonly said, the offender "makes a practice of it." The means used have absolutely no relation whatever to the question. The object of the regulation of the practice of medicine being simply and solely the protection of the public against the serious dangers that may ensue from incompetence—not the protection of established practitioners of the healing art against competition—the well intentioned busybody who makes a practice of gratuitously offering his services without having proved himself possessed of the necessary preliminary knowledge to minimize the likelihood of harm ensuing, is included in the prohibition, equally with him who practices for gain. He who undertakes, on the other hand, even in a single instance, to give his services for reward, is logically to be regarded as practicing, because it is an admitted propensity of human nature to repeat as often as possible any act that results

1. New York State Journal of Medicine, January, 1908.

in personal profit. There need be no fear, under such a definition, of hampering real benevolent assistance in an emergency, because one actuated by such a motive will most assuredly be only too glad to be relieved of the responsibility on the advent of one publicly authorized to assume it. If this reasoning be correct, the practice of medicine may be defined as "the engaging of oneself on one's own responsibility in the work of attempting to restore the health of others, of repairing their bodily injuries, or of correcting their bodily deformities, congenital or acquired, by any means whatsoever, mental, moral or material." All these, then, should be prohibited to those who have not publicly approved themselves, according to the juridical requirements of their locality, sufficiently acquainted with the knowledge of the day as to the structure of the human body, its normal functioning, and the disturbing influences thereof, intrinsic and extrinsic, to warrant a reasonable prospect of attainable success and of immunity from avoidable failure or consequent harm.

THE ARCHIVES OF INTERNAL MEDICINE.

The first issue of the *Archives of Internal Medicine* is before us. It opens with startling abruptness, for it not only has no title page (save in so far as the cover may be deemed such), but without even the hitherto indispensable preface, foreword, introduction, appeal to the reader, or what not. The opening words of the first article, "The Harvey Society has been founded for the purpose of forming a connecting link between the scientific research work of the laboratories and medical practice," might be taken as rendering any such preface unnecessary. For Harvey Society read *Archives of Internal Medicine,* and we have the best exposition of the purpose of the *Archives* that could have been compassed. For the rest, the contents will best illustrate the scope of the work: "The Nervous Affections of the Heart," by Friedrich Müller, of Munich, Germany; "The Hemolytic Reactions of the Blood in Dogs Affected with Transplantable Lymphosarcoma," by Richard Weil, New York; "Trichomonas Hominis Intestinalis: A Study of its Biology and Pathogenicity," by Hugo A. Freund, Detroit; "An Experimental Study of the Action of Oil on Gastric Acidity and Motility," by David Murray Cowie, Ann Arbor, and James Frederick Munson, Sonyea, N. Y.; "Experimental and Clinical Investigation of the Pulse and Blood Pressure Changes in Aortic Insufficiency," by Hugh A. Stewart, Baltimore.

THE LIABILITY OF WATER SUPPLY CORPORATIONS.

Two leading citizens of Franklin, Pa., are reported to have entered suit against the Venango Water Company on the ground that typhoid fever germs in its water mains were the cause of an outbreak of the disease in the families of the plaintiffs. It is said that if the damages asked for are obtained, including the expenses of the illness and due compensation for the physical and mental distress involved, some fifty or more similar suits will follow. If there has been gross neglect of possible precautions there should be no question as to a certain amount of liability; and the beneficial effects of a decision in the form of a fine are easily to be foreseen. The question of how far a water company is empowered to take the needed measures to protect the watershed from which it draws its supply may be raised and a legal decision on this point will be of value either as interpreting the existing statutes or pointing out the need of more adequate legislation. That the conditions that produce disease are sometimes preventable and remediable with ordinary precaution has been sufficiently shown by the Ithaca, Scranton, and other investigations, but so far the financial liability for their existence does not appear to have been settled.

"NON-MEDICAL HEALING!"

Probably no more forcible *reductio ad absurdum* of the current view, to which we have adverted elsewhere, as to what inherently constitutes the practice of medicine, could be conceived by the witlessness of man than House Bill No. 704, now before the General Assembly of the State of Ohio, entitled "A Bill to Regulate the Practice of Non-Medical Healing in the State of Ohio." Non-medical healing, forsooth! Why not a bill to authorize the non-juridical practice of law, or to establish non-sanitary boards of public health? Why not establish in the curricula of our state schools and universities courses for the teaching of non-theological divinity, of the non-biologic study of life, or the non-linguistic study of languages? We can hardly imagine that any legislature will so far stultify itself as not to resent the insult cast on its common intelligence by the very title of such a bill. If a bill of this nature must be presented, let it at least be correctly described as what it is—a bill to authorize the practice of healing without requiring proof of acquaintance with those basic truths and principles on which the safe application of any healing measure whatsoever must for all time inseparably depend.

NOSTRUM PRESCRIBING.

The influence which the habit of prescribing nostrums exerts on the mind of the practitioner is well set forth in a recent article by Dr. John H. Musser.[1] As he truly states, the retroactive effect on the prescriber is of the most serious consequence. That state of mind which allows it to be subordinated to the thoughts and conclusions of others leads "silently but surely to a lessening in vigor and virility." Any compromise with mystery, any lapse in the endeavor to comprehend the pathologic conditions, anatomic and physiologic, which confront us and the rational steps to be taken in assisting the damaged organism to regain its equilibrium, are departures from the scientific attitude which alone will lead to success. Such lapses, if allowed to creep in, tend to recur with ever growing frequency, and who of us has not seen the sad result? An almost unavoidable occurrence in the work of the busy practitioner leads, though to a less extent, in the same direction. A number of ex-

1. Amer. Jour. of Pharmacy, January, 1908.

cellent formulas are found to give, as a rule, satisfactory results in certain general conditions, and as they are used over and again, they come to mean scarcely more than a long name, and are prescribed with but little thought of the exact indications. The formulary which is found in nearly every hospital is unfortunately an economical necessity, but to those who depend on it it must prove a treacherous support. To the interne particularly, who is just beginning to realize the importance of therapeutics, and who should be laying the foundation for scientific work, it offers what appears to be a royal road to learning. The old rule never to administer a drug without having a clear conception of the reason for giving it would seem to be the best safeguard against therapeutic haziness.

THE BRITISH VIVISECTION BLUE-BOOK.

The situation in Great Britain as regards the cumbersome restrictions placed on animal experimentation is interesting and full of suggestion for us in this country. In another column this week we review the mass of evidence on the subject at the hearing of the Royal Commission in England. We have already commented on the attempt to make a law restricting animal experimentation in New York. It certainly behooves the profession to be informed on this subject if the beneficent results which have accrued to science and life-saving are to continue untrammeled.

Medical News

CALIFORNIA.

Smallpox.—At Red Bluff 4 cases of smallpox are reported. ——At Finley Lake 3 cases are reported.——About a dozen cases are said to exist in the immediate vicinity of Fresno, 3 of which are in Firebaugh.

Diphtheria and Scarlet Fever.—The schools of Durham have been closed on account of the prevalence of scarlet fever.——Diphtheria is reported to be raging at Roseville, where 20 cases are reported, with 5 deaths.——On account of the presence of diphtheria at Vina the public school has been closed.——Diphtheria is reported to be epidemic in St. Helena and Yountville.

Personal.—Dr. Guy Cochran, Los Angeles, has been promoted to chief surgeon of the Salt Lake Road, vice Dr. John R. Colburn, retired.——Dr. J. De Sousa Bettencourt, acting consul-general for Portugal in San Francisco, has been appointed by the king of Portugal a commander in the Royal Military Order of Christ.——Dr. George F. Reinhardt, Berkeley, returned January 4 after nine months in Europe.——Dr. David Gochenauer, San Diego, has been selected as the manager of the Angelus Hospital, Los Angeles.——Dr. Daniel B. Northrup, San Diego, has been appointed physician of San Diego County.——Dr. George M. Terrill, San Francisco, has been appointed surgeon of the Japanese liner *Nippon Maru*.——Dr. Buchanan Caldwell, Biggs, has been appointed health officer of Butte County. ——Dr. Fred K. Lord, Camptonville, while making a professional call, was thrown from his horse, fracturing his leg.——Dr. Lena Geraldson has resigned as assistant resident physician of Fabiola Hospital, Oakland, to accept a position on the staff of the Napa State Hospital.——Dr. Frank W. Edmonds, Berkeley, was rendered unconscious by an electric shock in his office recently.

COLORADO.

Enjoined from Practice.—Judge Bailey of Canon City is said to have granted an injunction in Trinidad against Dr. Alfred Freudenthal, prohibiting him from practicing his profession in Trinidad for five years, on account of breach of contract.

Personal.—Dr. John K. Miller, Greeley, is reported to be seriously ill.——Dr. Sidney Simon, a member of the staff of the Denver County Hospital, has gone abroad for six months. ——Dr. Thomas L. A. Shaffer, Salida, is reported to be critically ill with septicemia.——Dr. Warren E. Hickman has been appointed local register of the state medical board and health officer of Montrose.

Denver Mortality.—The board of health of Denver, in its annual report, has issued an official statement of the deaths in the city and county of Denver for the three years just passed. In 1905 there were 2,824 deaths reported; in 1906, 3,068; in 1907, 3,515. Chief among the death causes for the years were the following, the figures in each case being for 1905, 1906 and 1907 respectively: Typhoid fever, 52, 98, 99; tuberculosis, 698, 704, 695; cancer, 119, 133, 115; meningitis, 54, 107, 123; cerebral hemorrhage, 78, 98, 106; heart diseases, 264, 274, 352; pneumonia, 305, 277, 419; infantile diarrhea and enteritis, 62, 75, 73; appendicitis, 40, 30, 33; nephritis, 194, 192, 229; suicide, 48, 37, 47; accidents, 90, 81, 101, and homicide 21, 29, 23.

CONNECTICUT.

Illegal Practice Not Proven.—In the case of Biago de Cesare, New Haven, charged with the illegal practice of medicine, the charge was not proven, and the defendant was discharged.

Personal.—Dr. Daniel J. McCarthy, house physician of St. Vincent's Hospital, Bridgeport, has resigned.——Dr. Robert E. Ensign has resigned as health officer of Berlin after serving 23 years.——Dr. William L. Platt, Torrington, has been adjudged insane and committed to the State Hospital for the Insane, Preston.

Infectious Diseases.—During December one case of smallpox was reported; 315 cases of measles was reported in 27 towns; 187 of scarlet fever from 40 counties; 3 of cerebrospinal meningitis from 3 towns; 226 of diphtheria in 43 towns; 34 or more cases of whooping cough from 9 towns; 80 of typhoid fever in 28 towns, and 41 of consumption from 19 towns.

December Deaths.—During December there were 1,442 deaths reported in the state, equivalent to an annual mortality of 16.9 per 1,000. Chief among the deaths were: Diseases of the nervous system, 204; pneumonia, 187; heart diseases, 155; consumption, 130; accidents and violence, 80; influenza, 71; bronchitis, 35; diphtheria, 34; typhoid fever, 10; scarlet fever, 7; erysipelas, 6; cerebrospinal fever, 5; malaria fever, 3, and whooping cough and measles, each 2.

DELAWARE.

Communicable Diseases.—For the first time in two years smallpox was discovered in Wilmington, January 15.——Wilmington is just now suffering from epidemics of influenza and typhoid fever. The board of trade is urging the immediate building of a filtration plant.

State Medical Board.—On January 10 the governor appointed the following members of the State Medical Board: Drs. Henry W. Briggs and Abram E. Frantz, Wilmington; Dr. Edwin S. Anderson, Dover, and Dr. Ezekiel W. Cooper, Camden.

War Against Tuberculosis.—The tuberculosis exhibit of the Pennsylvania Anti-Tuberculosis Society, made under the auspices of the Wilmington organization, was a great success, and the lectures were well attended. The Delaware Red Cross Society has disposed of 630,000 of the Christmas stamps, which were issued to raise money for the fight against tuberculosis in the state.

DISTRICT OF COLUMBIA.

Register Tuberculosis.—The Senate on January 16 passed without dissent the Gallinger bill requiring the registration of all cases of tuberculosis in the District of Columbia, and providing for free examination of sputum in suspected cases of the disease.

Contagious Diseases.—During the second week in January 36 deaths were reported in Washington from influenza.——A case of smallpox was discovered in one of the employés of the Public Library, January 14, and 4 cases of the disease were discovered on the same day in Southwest Washington.

Would License Chiropractics.—Representative Livingstone of Georgia has introduced a bill in the House of Representatives to license chiropractics in the District of Columbia. This bill is introduced, it is understood, for the benefit of a single individual, whose institution has been declared by the Washington health officials to be a menace to the health of the district.

Personal.—Dr. Alfred Glasscock of the medical staff of the Government Hospital for the Insane is taking a trip to the Pacific Coast.——Dr. Robert Reyburn, Washington, in appreciation of 50 years of active practice, was presented with a loving cup by the Medico-Chirurgical Society, December 19.

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——Dr. Harry H. Donnally, assistant bacteriologist of the District health department, has resigned.——Dr. John L. Norris has been appointed medical inspector in the district contagious disease service, vice Dr. Wilbur H. R. Brandenburg, who has been appointed surgeon to the police and fire departments.

GEORGIA.

State Board Meeting.—At the annual meeting of the State Board of Health, held in Atlanta, January 7, the following officers were elected: President, Dr. Willis F. Westmoreland, Atlanta; vice-president, Dr. Charles Hicks, Dublin, and secretary, Dr. Henry F. Harris, Atlanta. One of the chief topics considered at the meeting was the establishment of a state institute from which free serum for hydrophobia, and also the Flexner serum for cerebrospinal meningitis will be distributed throughout the state.

Personal.—Dr. John C. Olmstead has been elected a trustee of the Grady Hospital, Atlanta, vice Dr. William S. Kendrick, resigned. The medical board of the hospital now consists of 13 physicians, 8 of whom are of the faculty of the Atlanta College of Physicians and Surgeons; 2 of the faculty of the Atlanta School of Medicine, and 3 unattached.——Drs. E. Bates Block, Atlanta, Thomas R. Wright, Augusta, Thomas M. Hall, Milledgeville, and J. Frank Harris, Pavo, have been appointed trustees of the State Sanitarium, Milledgeville.——Dr. Bernard Wolff has been appointed president, and Dr. Cyrus W. Strickler, vice-president, of the Atlanta board of health.——The medical board of Grady Hospital, Atlanta, at its annual meeting elected the folowing officers: President, Dr. James N. Ellis; vice-president, Dr. Rufus T. W. Dorsey, Jr., and secretary, Dr. W. L. Goldsmith.——At the meeting of the board of health of Spalding County Dr. Marcus F. Carson, Griffin, was elected chairman, and Dr. Thomas J. Collier, Griffin, secretary.

ILLINOIS.

Smallpox Bulletin.—The State Board of Health has issued a second edition of 20,000 copies of the circular on smallpox, which deals especially with the differential diagnosis between chickenpox and smallpox and gives statistics of vaccination and revaccination.

Bill Killed.—Senate Bill No. 581, to repeal the sections in 1903 law, providing for payment of reports of births and deaths, was defeated in the House of Representatives, January 21, only 23 votes in the affirmative being recorded. This also kills House Bill No. 914.

Tuberculosis Circular.—The Illinois State Board of Health has issued the sixth revised edition of the circular on the Cause and Prevention of Tuberculosis, copies of which may be obtained, without cost, on application to the secretary of the State Board of Health, Springfield, Ill.

Personal.—Dr. O. H. Crist, Danville, has been appointed a member of the staff of St. Elizabeth's Hospital, local surgeon for the Chicago Southern Railroad and assistant local surgeon for the Chicago and Eastern Illinois Railway.——Dr. William Richards, Colfax, who has been seriously ill with pneumonia, is reported to be improving.——Dr. Edward B. Hughes, Canton, is still seriously ill.

Unlicensed Physicians Arrested.—Five unlicensed practitioners of Madison County were arrested at Edwardsville, January 20, on the charge of practicing medicine without a license. Mary Wedig, Granite City, was found not guilty; Emma Howe secured a continuance in her case; John Loh and William Stelzer, Alhambra, gave bonds, but did not appear in court, and their bonds were forfeited, and Peter Hudson, a negro, of Venice, is said to have been fined $20.

Society Meeting.—At the annual election of Christian County Medical Society, held January 16 in Taylorville, the following officers were elected: President, Dr. James H. Dickerson; vice-president, Dr. Cephas L. Carroll; secretary-treasurer, Dr. Darwin D. Barr, and alternate delegate, Dr. Albert F. Turner, all of Taylorville; censors, Drs. John N. Nelms, Taylorville, William T. Bridges, Stonington, and Jesse B. Simpson, Palmer, and member of the committee on public health and legislation, Dr. Cephas L. Carroll, Taylorville.

Contagious Diseases.—Scarlet fever and smallpox are reported to be prevalent at Albany, where the schools and churches have been closed.——Two more cases of smallpox have been reported in Peoria, making 5 patients in all in the isolation hospital at present.——At Gibson 10 cases of smallpox of mild type are reported.——Mansfield reports 5 cases of smallpox.——At Kilbourne there have been 50 cases of smallpox, and there are still a large number of patients under surveillance.——Waukegan reports 13 cases of typhoid fever in McAlister Hospital.——Measles is so prevalent at Zion City that the schools have been ordered closed. On January 22, 60 cases were reported, and the city is under quarantine.

Tuberculosis Sanatorium.—Senate Bill No. 598, introduced by Mr. Glackin, which would give cities and villages "the power to establish and maintain a public sanatorium for the use and benefit of the inhabitants of such city or village for the treatment and care of persons afflicted with tuberculosis and to levy a tax not to exceed 4 mills on the dollar annually on all taxable property of such city or village, such tax to be levied and collected in like manner with the general taxes of said city, and to be known as the Tuberculosis Sanatorium Fund," passed the Senate, January 21, and is now up for third reading in the House of Representatives. Strong efforts are being made to secure the passage of the bill before the final adjournment of the legislature.

Chicago.

Hospital Report.—The annual report of St. Anthony of Padua Hospital shows that 1,535 patients were cared for at that institution in 1907.——The projected new building will, it is expected, be completed this year and will more than double the capacity of the institution.

Election.—The Chicago Ophthalmological Society has elected the following officers for the ensuing year: President, Dr. Thomas A. Woodruff; vice-president, Dr. Charles P. Pinckard; secretary-treasurer, Dr. Mortimer Frank; councilor, Dr. Thomas Faith, and alternate, Dr. Willis O. Nance.

War on Nostrums.—At a joint meeting of the Chicago Medical Society and the Chicago Retail Druggists' Association, January 27, war on "patent medicines" and other proprietary remedies which induce harmful habits of self-medication was agreed on. The object was to ally the two associations in a cooperative fight against nostrums of all kinds and the responsibility for the popularity of such compounds was placed at the door of every one handling the drugs, from the manufacturer to the prescriber and the dispenser. Dr. Henry B. Favill, president of the Chicago Medical Society, was chairman.

Senn Memorial Service.—Services in honor of the late Nicholas Senn, M.D., Ph.D., LL.D., will be held in Music Hall, Fine Arts building, 203 Michigan Avenue, Sunday, February 2, at 2:45 p. m., under the auspices of Rush Medical College, Northwestern University Medical School, College of Physicians and Surgeons, Chicago Medical Society, Chicago Surgical Association and the Nicholas Senn Club. President Edmund Janes James of the University of Illinois will act as chairman. Dr. Frank Billings, dean of Rush Medical College, will speak on "Nicholas Senn as a Teacher;" Dr. Arthur R. Edwards, dean of Northwestern University Medical School, on "Nicholas Senn as a Scientist;" Dr. William E. Quine, dean of the College of Physicians and Surgeons, on "Nicholas Senn as a Man;" Dr. Henry B. Favill, president of the Chicago Medical Society, on "Nicholas Senn as a Physician;" Dr. Albert J. Ochsner, president of the Chicago Surgical Association, on "Nicholas Senn as a Surgeon," and Dr. Daniel R. Brower, president of the Nicholas Senn Club, on "Nicholas Senn as a Traveler."

INDIANA.

Communicable Diseases.—Two schools in Terre Haute have been closed on account of the prevalence of smallpox.——Smallpox, which has been prevalent in Harrison, Concord and Olive townships, Elkhart County, is reported to be well in hand.——Walcottsville reports an epidemic of mumps.

State Board Election.—The State Board of Medical Registration and Examination at its annual meting, January 14, elected the following officers: President, Dr. J. Edwin P. Holland, Bloomington; vice-president, Dr. William A. Spurgeon, Muncie; secretary, Dr. William T. Gott, Crawfordsville, and treasurer, Dr. Moses S. Canfield, Frankfort. The board decided not to recognize the Eclectic Medical College of Indiana as an approved institution.

Society Meetings.—At the annual meeting of the Jackson County Medical Society the following officers were elected: President, Dr. Charles E. Gillespie, Crothersville; vice-president, Dr. L. Butler Hill, Seymour, and secretary, Dr. George H. Kamman, Seymour.——The annual meeting of the Greene County Medical Society was held at Linton, January 16. The annual address was delivered by Dr. Theodore Potter, Indianapolis, on "The Early Recognition of Tuberculosis." Dr. August F. Knoefel was elected president, and Dr. Frank A. Van Sandt, Bloomfield, secretary-treasurer.

Personal.—Dr. William F. King has been appointed secretary of the Columbia City board of health, and Dr. David S. Linville, Columbia City, physician of Whitely County.——By the will of Mrs. Julia Hoefgen, Crawfordsville, her estate, valued

at about $2,500, has been bequeathed to Dr. Jacob B. Etter, her family physician.——Dr. J. Aaron Meiner has been appointed health officer of Alexandria, vice Dr. Augustus R. Schaefer, resigned.——Dr. Leonard F. Schmauss and family, Alexandria, returned January 10 after five months in Europe. ——Dr. William S. Leiter, Claypool, was injured in a runaway accident, January 14.——Dr. Joseph Saunders, Anderson, is reported to be critically ill with cerebral hemorrhage.

December Diseases and Deaths.—The total number of deaths reported in December in the state was 2,768, equivalent to an annual death rate of 12.1 per 1,000. In the corresponding month of last year the total number of deaths was 2,956, equivalent to an annual death rate of 13.1 per 1,000. The deaths from tuberculosis were 315, as against 329 in the corresponding month of 1906. The following were the chief causes of death: Pneumonia, 334; violence, 184; cancer, 102; typhoid fever, 69; influenza, 43; diphtheria, 31; diarrheal diseases, 29; cerebrospinal meningitis, 16; measles and puerperal diseases, each 9, and scarlet fever, 8; whooping cough, 7. Bronchitis and tonsillitis were the most prevalent diseases during the month.——Smallpox was present in 18 counties, 207 cases in all being reported, with no deaths.

IOWA.

Communicable Diseases.—Smallpox is reported to be spreading over Grundy County; several cases are reported from Blackhawk Township; four houses are closed in Reinbeck, and 15 cases are said to be present in Gladbrook.——A severe case of cerebrospinal meningitis is reported from Pickering. ——An epidemic of cerebrospinal meningitis is reported from Wapello, where 7 cases have appeared, with 5 deaths.

Personal.—Dr. Henry A. Gray has been elected professor of anatomy and clinical surgery in the Keokuk Medical College, College of Physicians and Surgeons, to fill the vacancy caused by the death of Dr. George W. Jones.——Dr. Charles H. Churchill, Fort Dodge, who is about to move to Alliance, Neb., was the guest of honor at a banquet given by the Webster County Medical Society, of which he is an ex-president, January 3.——Dr. Hiram L. Getz, Marshalltown, is said to have been apprehended as an insane person at Omaha, January 17.

KANSAS.

Personal.—Dr. Charles J. Lidakay, Kansas City, has been appointed by the State Board of Control, medical examiner of applicants for admission to private insane asylums.——Dr. Charles H. Johnson, Atchison, has resigned as attending surgeon of the Soldiers' Orphans' Home.——Dr. Ernest J. Lutz, secretary of the board of health of Kansas City, will retire from that office at the completion of his term.——Dr. Charles M. Stemen has been elected president; Dr. Charles Ott, vice-president, and Dr. J. Albert Fulton, secretary of the board of health of Kansas City.——Dr. George A. Biddle has been elected president; Dr. Arthur F. Higgins, vice-president, and Dr. David L. Morgan, secretary, of the medical staff of St. Mary's Hospital, Emporia.

KENTUCKY.

Bequests to Charity.—Under the terms of the will of the late Mrs. Laura M. Bodine, Louisville, the Kentucky Antituberculosis Association is given $20,000 to be invested and the income used for white persons afflicted with tuberculosis; $1,000 is also left by the will to the Children's Hospital, and $1,000 to the Church Home and Infirmary.

Personal.—Dr. Benjamin F. Zimmerman, Louisville, was operated on January 18 for appendicitis at St. Joseph's Infirmary.——Dr. Louis G. Armendt has been elected a member of the Owensboro board of health.——Dr. Hardin K. Orsburn has been elected health officer of Owensboro, vice Dr. Cicero M. Heavrin.——Dr. Albert P. Dowden, Eminence, has succeeded Dr. Owen Carroll as coroner of Henry County.

Health Officers Organize.—The county health officers of the state met at Louisville January 16 and organized an association. Of the 119 counties in the state, 81 were represented at the conference. The following officers were elected: President, Dr. Thomas H. Baker, health officer of Louisville; vice-presidents, Drs. Nathan R. Simmons, health officer of Lexington, and Dr. John C. Boone, Wicliffe, health officer of Ballard County, and secretary-treasurer, Dr. Benjamin W. Smock, Louisville, health officer of Jefferson County. The next meeting will be held in Louisville in October, 1908.

LOUISIANA.

Unregistered Physicians.—The State Board of Health announces that there has been turned over to the secretary of the State Board of Medical Examiners the names of 172 physicians in the state, who, although not registered according to law, are practicing medicine. Active measures will be taken against these practitioners.

Communicable Diseases.—The inspectors of Mansfield board of health have finished their house-to-house inspection and have found five houses infected with smallpox, in which there were 12 patients.——The De Soto Parish board of health has found 36 houses infected and about 150 cases of smallpox.—— About 20 cases of smallpox of mild type are reported in Palmetto.——Lake Charles and other Calcasieu towns are suffering from an epidemic of measles.

Personal.—Dr. Henry L. Stokes, Mansfield, has been elected a member of the board of health of De Soto Parish.——Dr. Sidney L. Theard, New Orleans, secretary of the city board of health, is suffering from the attacks of a second cerebral hemorrhage.——Dr. Clarence Hutchinson has resigned from the staff of the Touro Infirmary, New Orleans, and will study abroad.——Dr. J. E. Mumford has been elected health officer, and Dr. Rezin L. Armstrong, Jr., a member of the board of health of Pleasant Hill.

New College Building.—The contract for the building of the new Richardson Memorial Building, Tulane University, has been let. The new building is to cost about $200,000 and will be three stories and a basement in height. The basement will contain workrooms for minor surgery, original research and toilet and storage rooms; the first floor will have a large lecture room and physiologic and pharmacologic laboratories, and also the administration offices; the second floor will contain pathologic, bacteriologic and histologic laboratories, private laboratories for the professors and research rooms; the third floor will contain the dissecting room, anatomical museum and laboratories for the curator of the museum and the professor of anatomy, research rooms and also a large lecture room. The building is expected to be ready in October next.

MARYLAND.

Medical Library Fund.—The total of the library building fund for the Medico-Chirurgical Faculty of Maryland now amounts to about 46,000.

Society Reorganized.—The George's Creek Medical Society, Frostburg, has been reorganized with Dr. Timothy Griffith, president, and Dr. Thomas F. De Naouley, secretary, both of Frostburg.

Pure Food.—Superintendent Ray of the House of Delegates has introduced a pure food bill, which proposes to leave the enforcement of the law in the hands of the state chemist of the Maryland Agricultural College.——Dr. Martin L. Jarrett, Parrettsville, proposes a similar law, but provides that the pure food commission attend to its execution.

Psychopathic Hospital.—Dr. J. Clement Clark, superintendent of the Springfield Hospital for the Insane, is in favor of the establishment by the state of an asylum where patients may be brought for early treatment without being legally adjudged insane, and held for diagnosis and treatment as in a general hospital. The clinical advantages of such an institution would be great and many cures would, in all probability, be effected.

Society Meeting.—At the annual meeting of the Anne Arundel County Medical Society, held January 14, the following officers were elected: President, Dr. Harry B. Gantt, Millersville; vice-president, Dr. W. Clement Claude, Annapolis; secretary, Dr. Louis B. Henkel, Annapolis; treasurer, Dr. Frank H. Thompson, Annapolis, and censors, Drs. James S. Billingslea, Armiger; Joseph M. Worthington, Annapolis; Thomas H. Brayshaw, Glen Burnie, and delegate to the state society, Dr. Walton H. Hopkins, Annapolis.

Baltimore.

Deaths of the Week.—During the week ended January 18 there were reported in Baltimore 28 deaths from influenza, 4 from bronchitis and 40 from pneumonia.——During the week ended January 25 there were reported 27 deaths from influenza, 5 from bronchitis and 52 from pneumonia.

Eudowood Hospital.—During the past year 138 patients were treated at the Eudowood Consumptive Hospital at an expense of $1.05 per day per patient. Of the patients 90 were discharged and 52 of these were apparently cured. The annual subscription to the fund for the support of this institution now amounts to $10,385.

Personal.—Dr. John C. Hemmeter and wife celebrated their crystal wedding anniversary January 18.——The case of Dr. John R. Abercrombie, charged by a woman with false arrest and sued for $5,000 damages, was decided by the jury in favor of Dr. Abercrombie.——Dr. B. Merrill Hopkinson was elected

president of the Baltimore Athletic Club for the seventeenth term, January 20.

MASSACHUSETTS.

Fined for Not Reporting Diseases.—Dr. Benjamin G. Galbenowitz, Boston, is said to have been fined $50, January 16, for failing to notify the board of health of a case of scarlet fever.

Children Fail Under Eye and Ear Test.—The superintendent of schools of Springfield announces that the result of the recent eye and ear tests in eight of the grammar schools shows that 23 per cent. of the pupils are deficient in eyesight and hearing.

Pasteur Avenue.—Among the plans for improvement in the vicinity of the new Harvard Medical School, which have been accepted by the school and city street department, is the making of an avenue to be named in honor of Louis Pasteur, which will lead up to the middle of the medical school quadrangle.

Asks Authority to Grant Medical Degrees.—The Rev. Thomas I. Gasson, S. J., president of Boston College, has petitioned the legislature to afford the college permission to confer degrees in medicine. This is said to be the first step toward a great Catholic university in Boston, for which land has already been acquired in Newton.

Personal.—Brig.-Gen. William H. Devine, Boston, surgeon general M. V. M., has been retired with the rank of major general, to take effect April 1, and has been succeeded by Lieut.-Col. Charles C. Foster, Cambridge, medical director of the Second Brigade.——Dr. Asher N. Chase, Everett, has been appointed a member of the board of health.——Dr. Fritz W. Gay has been appointed a member of the surgical staff of Malden Hospital.

Hospital Notes.—Plans for the new hospitals at Fall River for contagious diseases, for tuberculosis and for smallpox have been approved, and the construction of the administration building is to be proceeded with immediately.——Determined opposition is being made to the establishment on the "Little farm," Georgetown, of one of the three tuberculosis hospitals of the state.——Bids have been presented for the construction of the new building for the Boston Consumptive Hospital, Mattapan, varying from $81,235 to $118,339.

MISSOURI.

Local Option Law Enforced.—Dr. Enoch M. Bryan, Calloway County, is said to have been found guilty January 4 of writing illegal prescriptions for whisky, and assessed a fine of $50 on each of 36 counts, or $1,800 in all. At a meeting of the State Board of Health January 8, the license of Dr. Bryan is said to have been revoked.

Fined for Spitting.—On December 18 four physicians of St. Louis and one contractor were arraigned for violating the city ordinance by expectorating in street cars; two of the physicians were assessed costs of $3; one was fined $1 and costs, and one $5 and costs.——The president of the police board announces that hereafter the anti-spitting laws will be strictly enforced.

NEW YORK.

Medical Union Election.—At the annual meeting of the Medical Union, Buffalo, Dr. Verner Kenerson was elected president; Dr. Edward J. Meyer, vice-president, and Dr. Frank B. Rasbach, secretary-treasurer.

Commissioner of Agriculture and Infected Milk.—Charles A. Wieting of the state department of agriculture in his annual report to the legislature recommends "that some authority and adequate means should be given to the end that milk shall not be sold on the markets of this state that comes from diseased herds, particularly from herds suffering from tuberculosis." He also recommends an "examination of each and every herd from which milk is drawn and sold for consumption and adequate subsequent action."

The State Meeting in Session.—The New York State Medical Society has been in session at Albany this week. Dr. F. L. Trudeau, Saranac Lake, was elected president; Drs. A. G. Root, Albany, J. T. Wheeler, Chatham, and M. C. Hawley, East Randolph, vice-presidents; Dr. Wisner R. Townsend, New York, secretary, and Dr. Alexander Lambert, treasurer. Strong resolutions were passed against the proposed antivivisection legislation in the state, to which THE JOURNAL referred editorially January 18 and 25 and February 1.

New York City.

Nassau Hospital May Close.—This hospital, located at Mineola, L. I., may close the first of February unless there is a response to the demand for $8,000 necessary to conduct the institution. The financial flurry is supposed to have seriously affected the work. The excess of expenses above receipts is about $2,000 a month.

Druggist Wrote Prescriptions.—Edward Simon, a Brooklyn druggist, is said to have been convicted of practicing medicine without being regularly graduated and licensed, and to have been sentenced to 90 days' imprisonment in default of $500 fine. The defendant has furnished customers with medicine put up on his own prescriptions.

Contagious Diseases.—There were reported to the sanitary bureau for the week ended January 18, 803 cases of measles, with 25 deaths; 585 cases of scarlet fever, with 37 deaths; 406 cases of diphtheria, with 43 deaths; 402 cases of tuberculosis, with 181 deaths; 169 cases of varicella, with one death; 36 cases of typhoid fever, with 2 deaths; 14 cases of whooping cough, with one death; 13 cases of cerebrospinal meningitis, with 11 deaths; a total of 2,428 cases and 301 deaths.

New York Academy of Medicine.—The report of the sections for the year 1907 shows that the section on medicine has 340 fellows affiliated and an average attendance of 32; the section on surgery, 280 fellows, with an average attendance of 50; the section on obstetrics and gynecology, 191, and an average attendance of 41; the section on orthopedic surgery, 60, with an average attendance of 26; the section on pediatrics, 127, with an average attendance of 61; the section on genitourinary diseases, 132, with an average attendance of 20, and the section on public health, 153, with an average attendance of 81. The report also gives the number of papers read in each section, and the patients and specimens presented.

NORTH CAROLINA.

Hospital Chartered.—The secretary of state has issued a charter to the Grace Hospital, Morganton, for the conduct of a small public general hospital.——The Greenville Infirmary and Training School for Nurses has been incorporated.

Society Meeting.—At the annual meeting of the Cumberland County Medical Society, held in Fayetteville, January 16, Dr. James V. McGougan was elected president; Dr. Thomas C. Bullock, vice-president, and Dr. William S. Jordan, secretary-treasurer, all of Fayetteville.

Insane in Transit.—Governor Glenn solved a question in the case of a Hebrew, who became violently insane while traveling southward across the state, was taken from the train at Raleigh, and confined in the county jail. Under the state laws, an insane patient, in order to be confined in the State Insane Hospital, must be a resident of the state. As soon as the case was brought to his attention, however, the governor ordered the commitment of the patient to the State Insane Hospital.

OHIO.

New Hospitals.—The plans for the new State Hospital for the Criminal Insane, to be erected at Lima, are completed, and will be submitted to the General Assembly at the coming term. The new hospital is to be constructed on the cottage plan and will accommodate about 1,200 patients.——The Lake Shore Railroad has planned to build an emergency hospital at Collinwood. It will be under the charge of Dr. William H. Williams, division chief surgeon.

Cincinnati Delegates to State Republican Convention.—The published list of delegates from Cincinnati to the Republican state convention that will settle the contest for the presidency between Secretary Taft and Senator Foraker, so far as the support of Ohio in the national convention is concerned, contains the names of the following members of the medical profession: Charles A. L. Reed, F. W. Langdon, Brooks F. Beebe, A. B. Isham, O. W. Stark, S. A. S. Kantz, J. C. Krieger, Louis Feid, J. S. Hagen, J. F. Heady. The published lists of delegates from other counties of the state contain almost uniformly the names of one or more physicians, averaging in excess of 10 per cent. of the whole as far as published.

Change in the Columbus Medical Journal.—With the December issue of the *Columbus Medical Journal*, Dr. J. U. Barnhill retired from the editorship, which he has held for eight years and a half, subsequent to a previous connection with that journal for five years and a half in the post of associate editor. The *Columbus Medical Journal* has filled a definite and valuable position for the local profession. Although unable to control the admission of advertisements to his journal, since the advertising was in the hands of the laymen who published the paper, Dr. Barnhill has kept the reading pages free from commercial misuse, and has shown his sympathy with the movement for reform in proprietary medicines. It is announced that the new editor is Dr. C. S. Carr, formerly editor of

Medical Talk, a paper that was said to be published by the Peruna Manufacturing Company.

PENNSYLVANIA.

Bequests.—By the will of the late Samuel Boileau, Easton, the Easton Hospital will receive $1,000, and the Easton Home for Friendless Children $500.

Sentenced for Criminal Operation.—Dr. George S. Wyckoff, Pittsburg, charged with having performed a criminal operation on Stella M. Ritter in December, 1905, which caused her death, is said to have been sentenced to imprisonment for five years in the Western Penitentiary and to pay a fine of $100 and costs.

Failed to Report Births.—Dr. Austin Best, Harrisburg, the Swatara Township physician charged with more than a score of violations of the state law by failing to make returns of births, will be tried on one charge only, the register having allowed him to plead guilty to the other charges and pay his fines.

Hospital Opened.—The Hanover General Hospital was opened with appropriate ceremony January 14. The hospital staff will be composed of the local practitioners and a consulting staff has been appointed, consisting of the following: Drs. Arthur G. Barrett, Leonard K. Hirshberg, and Harvey K. Fleckenstein, Baltimore, and Drs. Joseph I. Smith, Pascal B. Bland and H. A. Solis, Philadelphia.

Births in Pennsylvania for 1907.—During 1907, 167,265 children were born in the state. The birth rate was 24.1 per 1,000 of population, the rate being 45.3 for foreigners and 20 for native born. There were 87,251 males and 80,014 females born. Twin births occurred 1,832 times and triplets 15 times. Of the twin births 1,259 occurred among the native and 569 among the foreign population. Of the triplets 11 cases were among natives and 4 among foreigners. The greatest number of births occurred in August, with 15,038, and the least number during April, with 12,999. The births for the year by months are as follows: January, 13,572; February, 13,411; March, 14,422; April, 12,999; May, 13,905; June, 13,690; July, 14,308; August, 15,038; September, 14,286; October, 14,168; November, 13,436, and December, 14,030.

Epidemic Diseases.—Diphtheria is reported to be epidemic at Jefferson, where the schools have been closed and church services suspended.——The village of Hartstown has been quarantined on account of an outbreak of diphtheria.——Johnstown reports 1,000 cases of influenza, and the disease is reported to be epidemic in Dallastown.——Six cases of scarlet fever are reported in one family at Perkasie.——An outbreak of scarlet fever is reported from Bryn Mawr, where the schools were closed from January 17 to January 27.——More than 40 cases of typhoid fever are reported at Sharon.——On account of the prevalence of measles in Pittsburg the state bureau of health ordered, January 14, that all persons in the city suffering from measles should be quarantined under the same restrictions that cover scarlet fever and similar contagious diseases. This is the first attempt of the board to isolate measles patients. This action was prompted by the alarming prevalence of the epidemic. Since January 1, 1,477 cases have been reported to the department, including 89 reported January 13, 42 reported January 14, and 108 reported January 20.

State Exhibition at Tuberculosis Congress.—At the meeting of the state committee of the International Congress on Tuberculosis, held in Philadelphia, January 12, it was decided to recommend a list of exhibits of this state at the coming International Congress to be held in Washington, to illustrate in a general way the campaign against tuberculosis as conducted in this state. Among the exhibits that the committee suggests are the following:

Models, pictures, diagrams, etc., explaining work done in private institutions in the state.

Pictures, statements, diagrams, etc., showing work of allied organizations, such as charity societies, Consumers' League, child labor committees, housing associations, etc.

Carefully selected pathological section, to be sent and labeled from different institutions.

Set of models, pictures and statements, showing, in logical order, the anti-tuberculosis work of the State Health Department.

Pictures and statements showing typical home and factory conditions.

Model of State dispensary, with pictures, statements, etc., summarizing the work of these dispensaries throughout Pennsylvania.

Models and panorama showing Mount Alto State Sanatorium and proposed additional sanatorium.

Pictures and statements showing after-care work made possible in State Forrestry Reservation.

Plans whereby state cooperates in organizing anti-tuberculosis committees and tuberculosis classes in connection with the state dispensaries.

Plans whereby state and other institutions cooperate in educating all communities on this subject.

Personal.—Dr. Jonathan C. Biddle has resigned as chief surgeon of the Miners' Hospital, Ashland, and will spend several months abroad.——Dr. C. H. Barlow, Dorranceton, has left for Huchow, China, to take charge of the Baptist hospital in that place.——Dr. Edwin H. Kistler, Lansford, relief physician for the L. C. & N. Co.'s beneficial fund since its organization, has resigned.——Dr. Alfred C. Sherwood, Union City, who has been surgeon of the Pennsylvania System at that place for more than 30 years, has resigned and has been succeeded by his son, Dr. Andrew J. Sherwood.——Dr. Emlyn Jones, Johnstown, narrowly escaped death by gas asphyxiation in his office January 1.——Dr. Hugh Hamilton, Harrisburg, who has been seriously ill with pneumonia, is improving.——Dr. Conrad S. Reber has been appointed president of the board of health of West Reading.——Dr. John K. Hammaker, Mechanicsburg, is ill at the Harrisburg Hospital with septicemia, and it is believed that the middle finger of his right hand will have to be amputated.——Dr. David C. Mock, Medix Run, is reported to be seriously ill with scarlet fever.——Dr. Daniel Dechert, Schuylkill Haven, has lost his right arm as the result of septicemia, due to an operation wound.——Dr. Isadore J. Weida has been elected president of the Emaus board of health.——Dr. Albert J. Winebrake, Scranton, has gone to Europe for four months.——Dr. John Todd has been reelected president of the Pottstown board of health.——Dr. Hiram E. Zimmerman, Mount Jackson, is reported to be seriously ill in New Castle.

Philadelphia.

Hospital Obtains More Space.—The American Hospital for Diseases of the Stomach has secured a lot 40x180 adjoining its present site at an assessed valuation of $20,000.

Personal.—Dr. Robert G. Le Conte has been appointed chief marshal for the annual University of Pennsylvania celebration on Washington's Birthday.——Dr. Thomas H. Fenton has been elected curator of the Academy of Natural Sciences.——Drs. Joseph W. Hearn and E. Tillson Ward have been elected members of the board of managers of the Southern Dispensary.

Hospital Report.—The ninetieth annual report of the Southern Dispensary shows that 9,012 new cases were treated in the clinics last year; that 18,519 persons visited the dispensary, and that 14,347 prescriptions were compounded. Of the cases treated 2,068 were medical, 1,439 surgical, and 3,655 were children. In the eye department 585 were treated; in the ear, nose and throat department, 589, and in the dermatologic department, 618.

The City's Milk Supply.—The report of the chief of the milk inspection division of the board of health for 1907 states that there was very little adulterated milk sold during that period. The inspectors made 88,667 inspections of milk, involving 1,904,000 quarts, of which quantity there were 7,506 quarts not up to the standard, and these were adulterated with water. During the year tests were made of 853,541 quarts of milk, which showed that no preservative of any kind had been used. During the same period nearly 2,000 inspections were made of dairies within the city limits, and only one of these establishments was condemned.

Health Report.—The total number of deaths reported for the week ended January 25 was 573, a decrease of 84 from the number reported in the previous week, and an increase of 16 over those reported in the corresponding week of 1907. The principal causes of death were: Typhoid fever, 21; diphtheria, 6; cerebrospinal meningitis, 5; consumption, 62; cancer, 25; diabetes, 4; apoplexy, 29; paralysis, 5; heart disease, 66; acute respiratory diseases, 111; enteritis, 18; cirrhosis of the liver, 6; Bright's disease, 33; premature birth, 14; congenital debility, 5; old age, 10; suicide, 5; accidents, 10, and marasmus, 8. There were 202 cases of contagious diseases reported, with 32 deaths, as compared with 266 cases and 32 deaths reported in the preceding week.

Officers Elected.—At the annual meeting of the Philadelphia County Medical Society, January 15, the following officers were elected: President, Dr. Albert M. Eaton; vice-presidents, Drs. Henry W. Cattell, Frank C. Hammond, William Evans, Robert L. Pitfield, Henry G. Godfrey and John B. Turner; secretary, Dr. William S. Wray; assistant secretary, Dr. Alexander R. Craig; treasurer, Dr. Collier L. Bower; censor, Dr. William M. Welch, and district censor, Dr. Milton B. Hartzell.——At the election for officers of the South Branch of the Philadelphia County Medical Society, Dr. Charles J. Hoban was chosen chairman, and Dr. James H. Baldwin, clerk.——At the annual meeting of the Medical Club of Philadelphia, January 18, the following officers were elected: President, Dr. George McClellan; vice-presidents, Drs. Wharton Sinkler and James B. Walker; secretary, Dr. J. Gurney Taylor; treasurer, Dr. Lewis

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H. Adler, Jr., and directors, Drs. Milton B. Hartzell, Walter Page, H. H. Whitcomb, Albert M. Eaton and Wilmer R. Krusen.

Health Department Work.—The total number of inspections in November made by the medical inspectors, excluding schools, aggregated 3,670. They ordered 632 fumigations and examined 56 cases for special diagnosis. The inspectors made 4,312 visits to schools and excluded 482 from attendance. They collected 432 cultures, made 167 injections of antitoxin, and performed 342 vaccinations.——The report of the department of vital statistics for November shows that 2,546 deaths and 1,757 births were recorded.——The report of the division of milk inspection shows that 7,678 sanitary inspections were made and 170,862 quarts of milk inspected. Of this number 339 quarts were condemned; 7 of the examinations were chemical, and 924 bacteriologic.——The report of the bacteriologic laboratory shows that 1,994 diphtheria cultures and 268 specimens of suspected typhoid blood were examined. The laboratory examined 924 specimens of milk, 145 specimens of sputum, and made 6 disinfection tests. The department also distributed 4,738,600 units of antitoxin.

TENNESSEE.

Personal.—Dr. J. Jefferson Gee has been appointed assistant city physician at Chattanooga, vice Dr. John B. Steele, retired.——Dr. James L. Andrews, secretary of the Memphis board of health, has taken charge of the City Free Dispensary.——Dr. Blackburn G. Tucker, Nashville, has been elected health officer, vice Dr. Shirley E. Cox.——Dr. William M. Wright has been elected president of the Huntington Commercial Club.——Dr. John T. Altman has succeeded Dr. William G. Ewing as a member of the Nashville board of health.

Elections.—At the last meeting of the Chattanooga and Hamilton County Medical Society the following officers were elected: President, Dr. Thomas E. Abernathy; vice-president, Dr. Samuel I. Yarnell; secretary, Dr. German P. Haymore, and treasurer, Dr. Noyes, all of Chattanooga.——At the annual meeting of the Dickson County Medical Association, held in Dickson, the following officers were elected: President, Dr. Alfred H. Abernathy; vice-president, Dr. W. W. Walker; secretary, Dr. Joseph C. Flower, and delegate to the state association, Dr. William S. Scott, all of Dickson.

TEXAS.

Medical Library for Dallas.—The Dallas County Medical Association has secured the class room in the Dallas Public Library and proposes to install therein a medical library.

District Society Meetings.—The semiannual meeting of the Fifth District Medical Association was held in San Antonio and the following officers were elected: President, Dr. Alonzo Garwood, New Braunfels; secretary, Dr. Evarts V. Depew, San Antonio, and treasurer, Dr. Jefferson Woolsey, Nixon.——At the annual meeting of the South Texas Medical Association, held in Houston, Galveston was selected as the next place of meeting. The following officers were elected: Dr. Jacob H. Sampson, Houston, president; Dr. J. Mark O'Farrell, Richmond, vice-president, and Dr. Edward F. Cooke, Houston, secretary-treasurer.——At a meeting of the North Texas Medical Association, held in Fort Worth, December 11, Mineral Wells was decided on as the place for the July meeting. Dr. James M. Inge, Denton, was elected president; Dr. James W. Carey, Whitesboro, vice-president; Dr. Hugh L. Moore, Van Alstyne, secretary, and Dr. Alva W. Carnes, Hutchins, treasurer.——At the annual meeting of the Seventh District Medical Association, held in Austin, the following officers were elected: President, Dr. Homer B. Hill, Austin; secretary-treasurer, Dr. Washington A. Harper, Austin, and censors, Drs. James C. Anderson, Granger; Edward M. Thomas, Georgetown, and Howard B. Granberry, Benjamin M. Worsham and S. E. Hudson, Austin.

VERMONT.

License Revoked.—At the annual meeting of the Vermont State Board of Medical Registration, held at Montpelier, January 14, the certificate of Miles A. Morehouse, Wevertown, N. Y., granted by reciprocity with Wisconsin April 13, 1907, was revoked, having been obtained by fraudulent representation.

Society Meeting.—At the annual meeting of the Bennington County Medical Society, held in Bennington, January 9, the following officers were elected: President, Dr. Linwood M. Kelley, Manchester Center; vice-president, Dr. Frank T. Hurley; secretary, Dr. Lucretius H. Ross; treasurer, Dr. Frank W. Goodall, all of Bennington; and delegates to the state society, Drs. Frank W. Goodall and Lewis H. Heminway, Manchester.

State Sanatorium Opened.—The State Hospital for the Treatment of Tuberculosis at Pittsford, erected at a cost of $100,000 and with accommodation for 35 patients, the whole being the gift of Senator Redfield Proctor, was formally opened Dec. 10, 1907.

GENERAL.

Railway Surgeons Meet.—The annual meeting of the Association of the Chicago, Milwaukee & St. Paul Railway Surgeons was held in Chicago recently. Dr. William Van Werden, Des Moines, was elected president, and Dr. Albert I. Bouffleur, Chicago, secretary (re-elected).

Pediatric Society Organized.—The New England Pediatric Society was organized in Boston, January 4, with Dr. Thomas Morgan Rotch, president; Dr. Arthur H. Wentworth, secretary-treasurer, both of Boston. Any physician in good standing, who is a resident of New England, is eligible for membership. Application for membership should be sent to the secretary. The annual dues are $2. The next meeting of the society will be held at the Boston Medical Library, February 15, at 8:15 p. m.

Seaboard Medical Association.—At the twelfth annual meeting of this association, held in Norfolk, Dec. 18 and 19, 1907, the following officers were elected: President, Dr. Armistead K. Tayloe, Washington, D. C.; vice-presidents, Drs. Edward C. S. Taliaferro, Norfolk, Va.; Benjamin F. Halsey, Roper, N. C.; John F. Woodward, Norfolk, Va., and John R. Parker, Tyner, N. C.; secretary, Dr. John R. Bagby, Newport News, Va. (re-elected); treasurer, Dr. Israel Brown, Norfolk, Va. (re-elected), and orator, Dr. James R. Speight, Norfolk, Va. Washington, D. C., was selected as the next place of meeting.

Gymnasium Directors Meet.—The Society of College Gymnasium Directors held its annual meeting at Columbia University, New York, December 27-28. This organization is largely made up of men who are either physicians or who have had medical training. They hold in their hands great possibilities for benefit to the youth of the land. The program indicates the important position that college gymnasium directors occupy in their oversight of prophylactic medicine by means of physical education. Among the subjects discussed were: "Faulty Carriage;" "Responsibility of the University Toward Defective Students;" "The Sphere of the Physical Director," etc. Dr. R. Tait McKenzie declared it to be a duty of the university to examine its students, so as to be able to warn those who are hampered by defects of special senses, development, posture, etc., which interfere with efficient work. The officers elected for 1908 are: President, Dr. Thomas A. Storey, College of the City of New York; vice-president, Dr. James A. Babbitt, Harverford College, Haverford, Pa.; secretary, Dr. Paul C. Phillips, Amherst College, Amherst, Mass.; council: president, vice-president and secretary, with Dr. R. Tait McKenzie and Dr. George L. Meylan, Columbia University, New York.

FOREIGN.

Spanish Surgical Association.—The *Siglo Medico* announces the organization at Madrid of a national association of surgeons, to hold biennial meetings. The first will convene at Madrid in May. Cortejarena is president and A. M. Cospedal is secretary of the new organization.

Hirschberg Presents an Endowed Library on Ophthalmology to the Berlin Library.—Professor Hirschberg has informed the authorities that his will presents his valuable collection of ophthalmologic works to the Berlin Royal Library with an endowment of about $4,000, the income of which is to be applied for subscriptions to the current periodicals on ophthalmology and optics.

The Official Organ of the German Antiquackery Society.—The Guide to Health—*Gesundheitslehrer*—is to be henceforth the official organ of the German Antiquackery Society, in place of the *Hygienische Blätter*, which will no longer be published. The *Gesundheitslehrer* was founded by Dr. H. Kantor of Warndorf, Bohemia, and is written in popular style. Our exchanges say that no physician's waiting room should be without it, as it presents interesting articles on health, etc., besides waging ceaseless war on quacks.

Antimalaria Legislation in the Argentine Republic.—The *Semana Méd.*, Dec. 5, 1907, gives the full text of the law recently enacted to control the spread of malaria. It has nineteen paragraphs and appropriates $15,000 as an annual provision for the defense against malaria. The country is to be divided into zones where malaria is endemic, periodical or accidental, and efforts are to be made to prevent its importation into the present free zones. The application of the meas-

ures which "the new prophylaxis" recognizes as effectual is to be enforced, and quinin is to be supplied to all the sanitary authorities and heads of industrial establishments, etc., for free distribution to the poor and at cost to others, similar to the Italian system. Declaration of every case of malaria is obligatory, especially for the directors of schools, asylums, plantations, railroads, etc., under penalties of from $10 to $50. The railroads and other public works in the malarial zones are instructed to fill up excavations and drain pools and swamps resulting from their work within three miles of inhabited houses. Failure to comply with these regulations entails a fine of $1,000, with $200 additional for each month of delay, after the term set by the authorities, and for each pool or swamp. The railroads crossing one or more malarial regions and the proprietors of stores, factories or works established in these regions, employing more than fifty individuals, must install a permanent medical service for their employés. Failure to comply with this regulation entails a fine of $200, and the authorities will install the medical service at the proprietor's expense. Quinin is freed from customs duties.

LONDON LETTER.

(From Our Regular Correspondent.)

LONDON, Jan. 11, 1908.

The Health of London.

The annual report of the health officer of the London County Council for 1906 has just been issued. When taken in conjunction with the more recent statistics of the registrar general for 1907, a great improvement in the health of London and an extraordinary and progressive decline in its death rate is shown. The latter reached the unprecedentedly low figure of 15.1 per 1,000 in 1906 and of 14.7 in the year just ended. Since the passing of the public health act in 1891 the death rate of London has declined 30 per cent. The death rate, which in the ten years 1861-70 was 24.4, has successively declined in the three following decades to 22.5, 20.5 and 19.6. The rate of infant mortality, which was 160 per 1,000 births in the decennium 1891 to 1900, has not exceeded 135 in the seven years 1901-7, and was unprecedentedly low in 1907—116. The death rate from the principal epidemic or infectious diseases in 1906 also fell to 1.4 in 1907, principally owing to the unprecedentedly low mortality from infantile diarrhea. The fatal cases of diarrhea were 4,507 in 1906 and 1,523 in 1907—a decrease only partly explained by meteorologic conditions in the past summer. No death from smallpox was registered in 1907, but the fatal cases of measles, scarlet fever and whooping cough were somewhat more numerous than in 1906. On the other hand, the deaths attributed to "fever" (principally typhoid) did not exceed 200, showing a decline of 75 from the number in 1906—being the least number recorded in any year of which records exist. Sir Shirely Murphy makes a curious comparison between the condition of the children of very poor people and those of the better class artisan. "Dirt inflammations in children of debilitated condition are the chief disease conditions of the slum schools, and in many cases for remedy require removal to a different environment, as in a residential country school. In the schools attended by children of the well-to-do artisan, the clerk and small shopkeeper, the children are often overclothed, coddled and pampered, and lymphatic conditions from want of exercise, enlarged tonsils, adenoids and anemia are the prevalent troubles.

Work of the Salvation Army Antisuicide Bureau.

General Booth presents a remarkable report of the work of this bureau, which was established about a year ago for the purpose of advising and encouraging individuals intending to commit suicide. During the year, 1,125 men applied to the London bureau alone, and an equal number sought help and consolation at the various branches. They belonged chiefly to the middle classes and had followed various occupations. Among them were clergymen, military officers, physicians, lawyers, constables, old sea captains, journalists, actors, teachers and mechanics. A notable fact, according to the report, is the fact that the "submerged" have not sought the aid of the bureau to any great extent, probably, as General Booth shrewdly remarks, because "either their bloodless condition deprives them of the courage necessary for self-destruction or that they have been so long near neighbors of misery that they are willing to continue the acquaintance to the end; or what is more feasible, the social agencies provided specially for these classes meet the requirements of the despairing among them." It is singular, too, that only 90 women appealed to the bureau for aid in London. It may be that women "are better able to bear up under their sorrows and trials than men," or that "the natural timidity of the sex prevented them from applying for relief." Most of those who applied had a superior education which rather unfitted them for the work within reach. As a rule, no financial relief was given, though in some cases this rule was broken. Sympathy, prayer and encouragement were always found useful.

VIENNA LETTER.

(From Our Regular Correspondent.)

VIENNA, Jan. 8, 1908.

An Outbreak of Typhoid Due to Milk.

The medical and sanitary authorities of Vienna have been somewhat alarmed by an outbreak of typhoid which, within a week, comprised thirty-five cases. As Vienna is the only large city in Europe which has been able to boast of being comparatively free from this disease, the common source of these cases was eagerly sought for. Since the completion, in 1879, of the aqueduct which supplies Vienna with water from the mountain range 6,000 feet high, about 50 miles from Vienna, no epidemic of this disease has been observed, and sporadic cases, it has been proved, have been imported by strangers or visitors. The recent outbreak was traced to certain milk stores. It appeared that the milk was collected from the suburbs and the neighboring villages, and that in some of them the milk was adulterated by admixture of water. During the process of pasteurization, by some mistake the required temperature of 70 C. was not reached, only 40 C. being attained. The milk was thus not free from spores, and when used unboiled infection was possible. The appearance of typhoid in some of the surrounding villages gave the clue as to where the actual pollution of the milk took place. So far, two cases have terminated fatally.

A Migratory Needle.

The question as to whether or not a foreign substance can migrate in the human body was raised recently at an autopsy conducted by Professor Sternberg on the body of a man aged 45 who had died suddenly. At the postmortem four fragments of a needle, each about one inch long, were found in the subcutaneous fat of the abdominal wall. The pericardial sac was filled with liquid blood and its anterior and posterior walls each showed a fine slit-like opening; two similar slits were found on the pulmonary artery, above the valves, and penetrating the lumen of the vessel. No other injury was visible. The slits were undoubtedly due to the piercing action of the needle fragment, which might have been carried away by the blood stream or have been one of the fragments found in the abdominal wall. We have no positive knowledge of the rate of movement of foreign bodies in the human organism. The findings in the pericardial sac permit the supposition that the needle penetrated the anterior aspect of the sac, pierced the artery, and left the sac on its posterior aspect a short time before death, as there were no signs of any respiratory changes in the lungs.

Suggestions for Suppression of Venereal Disease.

The recommendations of the committee for studying the suppression of venereal diseases appointed by the Vienna *Gesellschaft der Aerzte*, has recently been published, and contain some valuable ideas. The main suggestion, which is not original, however, consists in recommending the lawful detention of an individual when he becomes dangerous to the public, just as dangerous insane and criminals are kept away from society. Compulsory notification of these diseases is not considered necessary by the committee except in cases in which contact infection, or infection of children is imminent. Then the sanitary authorities should be communicated with and they should have the power to enforce isolation of the patient. In such cases, breach of professional secrecy should be lawful, but all persons engaged in notification or watching such patients should be bound not to disclose anything about them except officially to the authorities, who, again, should be bound by the same rule. Prostitution, the committee reports, should not be deemed unlawful, so long as it is controlled by the state, because these women are less infectious than those who practice secret prostitution. Diseased prostitutes should be detained for the whole period of infectivity. Examination of these women should not be done in their dwellings. Physicians doing this work should be paid by the state. The number of beds in wards for venereal diseases should be increased and treatment should be free. Infected persons who continue sexual intercourse should be punished by law, even if no infection results. Such punishments should be kept secret, however. The report emphasizes the importance of education of the public and practitioners regarding the period of infectivity, and also advocates instruction of men before marriage.

Therapeutics

[It is the purpose of this department to outline an up-to-date management of disease, to suggest scientific treatment for diseased conditions, and to present prescriptions that are simple, useful and palatable. Prescriptions are written in both the metric and apothecaries' systems, but the amounts of the ingredients are NOT exact translations of one system into the other, but quantities convenient for pharmacist and physician. It should be understood that solids are weighed in grams or fractions of grams, while liquids are measured in cubic centimeters; that a teaspoon holds five cubic centimeters, i. e., more than a fluid dram, hence a 100 cubic centimeter preparation will contain twenty doses.]

Chronic Bronchitis.

A simple prolonged acute bronchitis or an acute bronchitis becoming subacute bronchitis is not chronic bronchitis. Chronic bronchitis is not a very frequent disease, and an out-of-door life in dry regions, if possible, is almost an absolute necessity for cure. Medical treatment will aid, but will rarely cure the condition. Any improvement in the general health of the individual will also better the bronchitis. Some patients are comparatively free from their chronic cough and expectoration in the warmer seasons of the year, to have it annually return during the cold and damp seasons.

Terpin hydrate will diminish the secretion of mucus and often improve the condition while it is being taken. It should not be combined with a narcotic, as in any chronic condition opium or any of its alkaloids should not be given. Also the cough of chronic bronchitis is generally painless and productive of expectoration, hence it should not be stopped.

℞ gm.
Terpini hydrati ..... 5| or gr. lxxv
Fac capsulas 20.
Sig.: A capsule, with water, every four hours.
Or:
℞ Tabletas terpini hydrati, ăă, gr. v, No. 20.
Sig.: A tablet every four hours.

An iodid is often of marked benefit, at first increasing the expectoration and tending to diminish the purulent secretion and render the mucous secretion more liquid, and seems, often, to make the mucous membrane healthier. Its greatest advantage is in chronic bronchitis combined with asthma. Iodids should not be given when tuberculosis is present or a suspicion that there is a tuberculous focus, as it tends to cause the tuberculous region to break down. It may be given either as the sodium or potassium iodid, as:

℞ gm. or c.c.
Potassii iodidi ..... 5| or ʒiss
Aquæ ..... 100| fl ʒiv
M. et Sig.: A teaspoonful, in water, three times a day, after meals.

It is often best to double the above dose, and if there is asthma the iodid can be given in gradually increasing doses until very large doses are administered. If the patient's cough and expectoration become less and he adds weight, if he is thin, or reduces weight, if he is too fat, the drug is doing good. If the obverse of these conditions takes place, the drug is doing harm and should be stopped.

If the symptoms of iodism occur, the drug should generally be stopped for a time, and smaller doses given. These symptoms are frontal headache, coryza, a metallic taste in the mouth, and, often, a coated tongue. The headache is due to the congestion of the mucous membrane in the frontal sinuses. These symptoms will generally rapidly disappear after stopping the drug. One or two doses of atropin will hasten the relief of these symptoms. After the first symptoms of iodism patients often acquire a tolerance and can take large doses without discomfort. Often, sooner or later, an acne eruption may appear from the iodid. Some patients can not take a small dose of iodid without the disagreeable coryza, but can take large doses without these symptoms. Such an action is difficult to explain unless it is because the large doses promote more rapid elimination.

Cod-liver oil is many times valuable in chronic bronchitis. So are also olive oil, fat emulsions, plenty of butter, or any other aid to nutrition, provided the patient is not over-weight. If the patient is stout, the opposite is the better treatment, viz., something that would reduce weight, as the iodids, small doses of thyroid, saline laxatives, and a reduction of sugar and carbohydrate food. If cod-liver oil is given, it is better given straight and not in an emulsion.

℞ c.c.
Olei morrhuæ ..... 100| or fl ʒiv
Sig.: A teaspoonful, three times a day, after meals.

[This oil may be administered on black coffee, or a little salt may be placed in the bottom of a wineglass with an ounce of water and the oil floated on top of this. The whole swallowed quickly leaves nothing but a salt taste in the mouth.]

Anything that improves the patient's condition renders the bronchitis less, and medicinal treatments frequently of value are the hypophosphites or glycerophosphates, as:

℞ c.c.
Syrupi hypophosphitum ..... 200| or fl ʒvi
Sig.: Two teaspoonfuls, in water, three times a day, after meals.
Or:
℞ c.c.
Syrupi hypophosphitum compositi..... 200| or fl ʒvi
Sig.: Two teaspoonfuls, in water, three times a day, after meals.
Or:
℞ c.c.
Elixiris glycerophosphatum (N. F.)..... 100| or fl ʒiv
Sig.: A teaspoonful, in water, three times a day, after meals.

[This elixir contains in each teaspoonful 0.06 grams (1 grain) of glycerophosphate of sodium and 0.03 grams (½ grain) of glycerophosphate of calcium.]

Arsenic in small doses, long continued, has often seemed of value in this disease. It may be given alone or combined with iron, as:

℞ c.c.
Liquoris potassii arsenitis..... 20| or fl ʒss
Sig.: Three drops, in water, three times a day, after meals.
Or:
℞ gm.
Arseni trioxidi ..... |04 or gr. 2/3
Ferri reducti ..... 2| gr. xxx
M. et fac capsulas 20.
Sig.: A capsule three times a day after meals.

[The above capsules should be made up dry, not into a pill mass.]

If the circulation is weak and the arteries are in good condition, digitalis in not too large doses, as from 10 to 15 drops of the tincture three times a day, is often needed. If the patient is older and there is arteriosclerosis, strychnin is useful, in doses of 0.002 gram (1/30 grain), three times a day, after meals. The strychnin may be combined with the above capsule if desired. Strychnin seems of special value in patients who have emphysema with the bronchitis.

Of all treatments, however, the most valuable is hygienic, i. e., the abandonment of any occupation that causes a large amount of dust to be inhaled, removal from cities into the country, where there is less dust and cleaner air, and removal to a dry climate.

Pernicious Vomiting of Pregnancy.

Norris (*American Journal of Obstetrics*, April, 1907), thinks that in some neurotic patients rest and treatment by suggestion is of value.

Daily washing out of the stomach has been beneficial, and if there is hyperacidity he uses weak solutions of bicarbonate of soda (0.4 gm. of 1 per cent., or 2 grains to the fluid ounce). If there is a catarrhal condition of the stomach, he has found silver nitrate useful, and gives it as follows:

R.	gm. or c.c.		
Argenti nitratis	20	or	gr. iv
Aquæ	100		fʒiv

M. et Sig.: A teaspoonful, in a glass of water, every six hours.

When the vomiting becomes less he then gives a capsule of the following:

R.	gm. or c.c.		
Cocainæ hydrochloridi	15		gr. iiss
Cerii oxalatis	4	or	ʒi
Bismuthi subnitratis	6		ʒiss

M. et fac capsulas 20.

Sig.: A capsule every four hours.

He sometimes uses counter-irritation over the stomach with mustard applications, and gives rectal injections, every six hours, of:

R.	gm.		
Potassii bromidi	10		ʒiiss
Chlorali hydrati	5	or	ʒi
Aquæ	100		fʒiii

M. et Sig.: Inject four teaspoonfuls in warm water into the rectum every six hours.

He also gives a hypodermic of morphin at night to secure sleep.

He believes that the most valuable single means of treatment is the frequent lavage of the colon with warm physiologic saline solution, leaving a portion of the fluid in the bowel, which will allay the thirst and aid in the secretion of the kidneys during this period in which the stomach does not retain sufficient liquid for the normal amount of water absorption.

Norris believes that it is useless to give food by the stomach when it increases the nausea or causes vomiting, although from time to time he would try one of the predigested nutriments. In a bad case the patient should be given absolute rest in bed, the stomach washed out every morning, and, perhaps, after the stomach washing a little predigested milk or egg water may be left in the stomach, which may remain with the influence of the morphin sedative that was administered during the night. He does not believe in relying on rectal feeding, as a patient can become very weak and practically starve on such attempted nutrition.

He also believes that the suggestive treatment in neurotic cases is paramount, and thinks that some local treatment of the pelvic organs *per vaginam* sometimes creates an impression in neurotic cases so that the vomiting may cease.

DISCUSSION OF THIS TREATMENT.

If examination, in a case of pernicious vomiting in pregnancy, shows no apparent kidney defect or abnormal uterine condition, the feeding of thyroid in small daily doses, as from three to five grains a day of the dried extract, will sometimes be of value. If the condition, on the other hand, is due to the patient's being neurotic, if rest, suggestion and simple stomach treatments, and possibly the occasional washing out of the stomach are of no avail, it would seem more justifiable to produce abortion than to give such strong treatment as above recommended. In other words, if a patient must go to bed, have daily stomach washing, almost stoppage of all nutrition, chloral and bromid *per rectum*, and morphin hypodermatically, we are justified in doing the thing that, even if the patient's life is not in absolute danger, will save a prolonged invalidism.

It is not sufficient to note whether or not there are albumin and casts in the urine. The twenty-four hours' urine should be repeatedly and carefully examined for the excretion of nitrogenous elements and salts, and if marked defect is found, careful consultation should decide whether or not the uterus should not be emptied in this persistent vomiting.

The washing out of the lower bowel is certainly good treatment, as many times absorption of the decomposition products from the colon is the cause of a toxemia, and the cause being removed, the patient will improve.

If rest in bed to await a change of pressure from the enlarging uterus on the nerves (and the various organs of the body seem healthy) stops the nausea, such bed treatment is justifiable. If nutrition is failing, the patient becoming weaker and weaker, we are not justified in waiting before operating, nor are we justified in giving a lot of narcotic medication.

Psoriasis.

R.	gm. or c.c.		
Talci purifacti	10		ʒiiss
Zinci oxidi	50	or	ʒii
Olei cadini	40		fʒiss

M. et Sig.: Apply to the affected skin every second day.

(Danlos: *Journal de Méd. de Paris*, Oct. 16, 1907.)

To Abort a Boil.

R.	gm.		
Acidi salicyli			
Emplastri saponis	āā 5	or	ʒi
Emplastri plumbi	10		ʒii

M. et Sig.: Spread on a piece of linen, cut to the proper size, and apply to the boil.

(*Journal de Méd. de Paris*, Oct. 16, 1907.)

A simpler method is to apply collodion when the first symptoms appear.

Burns.

While the general treatment of burns was discussed in THE JOURNAL, Sept. 7 and 14, 1907, the following suggestions for the immediate treatment and for the equipment of emergency kits may be of value.

It is not a good plan to put dry powders or thick ointment dressings on burns, at least during the first twenty-four hours.

As a temporary immediate dressing perhaps nothing is better than a mixture of powdered zinc with castor oil, in the proportion of one pound of the zinc oxid to one pint of castor oil. These preparations may be carried in the emergency bag and mixed together in any receptacle at hand. The burn thoroughly covered with this mixture and then a mass of gauze saturated with the mixture, placed over the burn, and bound lightly with gauze roller bandages soothes the pain, keeps out the air and does not injure the tissue.

The following preparations are also useful:

R.	gm. or c.c.		
Aluminis	1		gr. xv
Plumbi acetatis	5	or	ʒi
Aquæ	100		fʒiii

M. et Sig.: Add a teaspoonful to a pint of warm water, and apply as a wet dressing to the burned areas.

Or:

R.	gm. or c.c.		
Acidi pierici	5	or	ʒi
Aquæ	100		fʒiii

M. et Sig.: Add a teaspoonful to a pint of warm water, and apply as a wet dressing to the burned areas.

Septal Deviations.—H. P. Mosher, in the *Laryngoscope*, states that there are two great causes of deviations of the septum: trauma and asymmetry of growth. Of late, he declares, trauma has been held to play only a minor part; the tendency has been to consider unequal development of the two halves of the head the chief cause. This is true in some cases, but more often the inequality of growth is confined to the bones forming the hard palate, namely, the superior maxillæ, the palate bones and the premaxillæ. Mosher declares that the irregular and delayed irruption of teeth, especially the incisors, is responsible for this asymmetry in a large number of cases.

V 50
1908

Pharmacology

ALLEOTONE.

A Sample of the Pseudo-Science and Deficient Information Offered Physicians.

We have received from readers in various parts of the country circulars and other "literature" advertising a preparation called "Alleotone." The following are samples of the claims made by its promoters for this preparation:

> "Alleotone . . . is one of the finest therapeutic agents known to the medical profession."
>
> "In Philadelphia, some of the leading physicians have stated: 'Alleotone is almost a sure cure for infective diseases.' Many hospitals are now using nothing but Alleotone on infective diseases and two have instructed their nurses to give it at the first appearance of fever."
>
> "A medicine that the physician can lay his hands on with the assurance that it will work alike in every case and WILL CURE DISEASE. It will cure 90 per cent. of the cases now being lost by all other treatments."

Before trying, even "on the dog," any new remedy that makes such startling claims, it is well, as a preliminary, to investigate what *prima facie* evidence may be forthcoming with reference to what can with certainty be ascertained about it, as well as the trustworthiness of those making these startling claims, so far as their accuracy can be checked in matters of demonstrable fact. The following is what purports to be the formula of the preparation, as given on the first page of an advertising pamphlet:

Alcoholicl (Monatomic)	gr. 1/1000
Quininæ Sulphatis	gr. 1/384
Ac. Sulph. Dil. (10 per cent.)	gtt. 2½
Ac. Nitricl Dil. (10 per cent.)	gtt. 1/77
Ac. Butanol-Dioic.	gr. 1/3
Tr. Ferri Chloridi	gtt. 1/26
Aqua	gtt. xx

This formula is followed by several paragraphs of unique, if hardly accurate, descriptive matter setting forth the therapeutic values of the several ingredients, together with some rather original observations in chemistry.

As an aid to the profession in comprehending the value and the uses of this remarkable preparation, the formula above given is worthless. It can only mislead and mystify. Here and there, it is true, flashes of truth appear, but the greater part of the literature is a mere jumble of inaccurate and mystifying statements.

For instance, we are told:

> "Monatomic Alcohol is one of the constituents of all nerve tissue: 'It is a product of the replacement of one atom of hydrogen of the hydrocarbons by their hydroxyl group H.O.'"

This is indeed a piece of information that does not inform; since there is a vast number of monatomic alcohols and of every description. The assertion that the preparation "contains a salt" would be perfectly analogous and just as enlightening.

But not content with evading the promise implied in the publication of a formula, by thus giving information of no value whatsoever, the exploiters mislead by the further statement that monatomic alcohol is "one of the constituents of all nerve tissue." As the only monatomic alcohol commonly stated to be found in nerve tissue is cholesterin, one would naturally infer from the above statement that this substance is a constituent of the preparation; but all chemical tests have failed to reveal its presence. Even were it present in the formula, however, we are at a loss to see what therapeutic action it could possibly have.

In explaining the action of "Ferri Chlo" the following extremely interesting statement is made:

> "Ferri Chlo is found with all proteids and nucleins and herein acts as magnetic iron, aiding the play of the electrical travel."

The first assertion is untrue, for iron does not exist as chlorid in the cells of the body, but as some organic iron compound; neither is it found in all proteids, but principally in nucleoalbumins; and all proteids do not contain nucleoalbumins. The assertion that the iron chlorid "acts as magnetic iron aiding the play of the electric travel" is nonsensical and on a par with the electric belt method of exploitation, and suggests forcibly the class to which Alleotone belongs.

We are further told:

> "Sulphuric and nitric acids act in removing hydrogen atoms and substitute atoms of the radical NO_2: that is, as hydrogen tranquilizes the speed of burning or oxidation, its action is substituted by the atom nitrogen which is energy itself, nitrogen being the base of all explosives."

Certainly sulphuric acid is an oxidizing agent and in virtue thereof removes hydrogen; but not in a solution whose concentration with respect to sulphuric acid is approximately only 0.82 per cent.

Nitric acid, likewise, when in a concentrated form, somewhat readily gives up its nitro-groups, but in a solution containing 0.12 per cent. of nitric acid there would be practically no tendency to this evolution of its nitro-groups.

The statement that nitrogen is the "base of all explosives" is another example of the methods of the promoters. A statement incorrect, yet cleverly vague, is made evidently with the intention of impressing the reader with the erroneous idea that it is to the nitrogen atom that is due the tremendous power of nitro-explosives, whence by analogy the wondrous potency of Alleotone is artfully suggested. As it is a well-known fact, however, that nitrogen itself is one of the least reactive of gaseous elements, little confidence can be placed in such remarks as "Nitrogen which is energy itself."

Another mystifying term is "Ac. Butanol-dioic." This is a true chemical name, certainly, but it is one that is so little used that it will be recognized only by one who has closely followed chemical nomenclature through its various changes, and is acquainted with the rulings of the "Geneva conference;" in other words, few physicians will recognize in it simple malic acid, an ordinary vegetable acid widely distributed in ripe fruits, such as apples and pears, and possessing the properties simply of a relatively weak organic acid. To describe it as exercising any potent influence "in the oxidation of the prosphorus as lecithin in the cell"—especially in the extremely low concentration in which it is stated to exist in Alleotone—is simply an absurd juggling with words.

On the showing of its promoters, its literature, and its method of exploitation, the preparation should take its place at once as one of a certain class of "ethical proprietaries" that has its counterpart in "patent medicines" and "patent medicine" methods. The public, too, is informed (?) concerning the therapeutic value of the various ingredients contained in many of the "patent medicines" which it is urged to buy. It is not much to be wondered at that the public should be taken in by such pseudoscientific "literature;" but it is not only strange, it is discreditable to our profession, that among its members should be found any to accept such rubbish as the above quoted "literature" as information worth acting on—yet such there are, judging from the testimonials.

Wintersmith Tonic Wine.

NEPOMUCENO ALTA, CUBA, Jan. 6, 1908.

To the Editor:—I enclose a circular on Wintersmith Tonic Wine, a proprietary article made by Arthur Peter & Co., Louisville, Ky. The circular is in Spanish, which I have translated as follows:

We once more take the liberty of calling your attention to the remarkable curative properties of the "Wintersmith Tonic Wine," the "celebrated Anti-anemic and Antimalarial" (medicine). Although the matter accompanying this (letter) has no scientific character, still, we hope that it may in some manner interest you. If you count yourself among the great number of physicians who have the fortune to prescribe or take "the Life-saving Wine" we would highly appreciate the honor of knowing your opinion concerning the qualities of our preparation.

I never prescribe any "patent medicine," but as several physicians here are using this preparation, and some of my patients have suggested its use, I should like to know its composition in order that I may be the better able to combat its pretensions. I understand that it contains quinin, yet the makers claim the contrary. J. M. ESPIN, M.D.

COMMENT.—"Wintersmith Tonic Wine" is the name under which Arthur Peter & Co., Louisville, Ky., export the preparation advertised and sold to physicians in the United States as "Febri-Tone." According to the advertising literature, the active ingredient in this preparation is quinidin sulphate, an obsolete cinchona alkaloid. Each fluid ounce of the remedy is said to contain six grains of the salt. The action of quinidin is essentially that of quinin, with which it is isomeric; quinidin sulphate was official in the Pharmacopeia of 1890, but was dropped from that of 1900, presumably because it had been proved of less value than other alkaloids of cinchona. It certainly has no advantages over quinin, and the dose is about one-half larger; therefore, if the statement in the literature is correct, each ounce of the liquid contains the equivalent of only about three grains of quinin.

As usual in exploiting proprietaries, the manufacturer claims that his preparation has wonderful curative properties not possessed by other remedies containing the same drug or active principle. For example, the following quotation appears in the literature circulated among physicians:

"Febri-Tone is unexcelled in all periodic disorders and neuralgias of malarial origin and in convalescence. Where quinin or its salts has proved unavailing; in obstinate and chronic cases; in the malaria of infants and children, its efficacy is remarkably gratifying and it produces none of the noxious symptoms that so often accompany the administration of quinin." Again: "In short, Febri-Tone fully and pleasantly replaces and is specifically more effective than quinin or any of its salts."

And this in spite of the facts that quinidin and its salts are acknowledged to be less effective than quinin and must be given in larger doses.

Such claims, if they referred to a "patent medicine" pure and simple, would be ridiculed by every physician in the country; but relating as they do to an "ethical proprietary" they are accepted by some physicians at least as authoritative statements to be relied on.

Correspondence

The Inventor of the Guillotine.

PHILADELPHIA, Jan. 19, 1908.

To the Editor:—In THE JOURNAL, Jan. 11, 1908, page 137, Dr. James Moores Ball corrects a statement attributed to me, in regard to Dr. Guillotin's death. It would have been more courteous for him to have waited until my paper was published in full, as it is not customary to review or to comment on such accounts of society meetings, often written by non-medical reporters. I endeavored to make my paper somewhat humorous, intending to restrict myself, should I publish it, to the truth. Your correspondent must know, as he seems to have looked up the subject, that there has been endless discussion about Dr. Guillotin and the guillotine, so much so in fact that I believe that the statement that the value of my paper was "much lessened" by my saying that "Dr. Guillotin, inventor of the guillotine, had his own head chopped off" is exaggerated. There is a similar good old anecdote going back to the days before Dr. Guillotin died and even before he was born. Dr. Ball mentions in his letter the "maiden" of Scotland, but he did not tell us that it is believed that the regent, James, earl of Morton, introduced it into that country. Sir Walter Scott says, speaking of him: "He met his death with the same determined courage that he had often displayed in battle; and it was remarked with interest by the common people, that he suffered decapitation by a rude guillotine of the period which he himself, during his administration, had introduced into Scotland from Halifax; it was called the 'maiden.'" —(History of Scotland, vol. 11, p. 168.)

From this popular tradition has come the saying: "He that invented the maiden first hanselled it."

Perhaps your correspondent does not believe this story either; I prefer to believe in it.

True it is that Dr. Guillotin did not have his head cut off, but it is a very popular error; even Thackeray in his "Adventures of Philip," Biog. Ed., p. 277, says: "Was not good Dr. Guillotin executed by his own neat invention?" A question, but only admitting of but one answer.

Dr. Guillotin at any rate came very near suffering from his own "neat invention," as it is stated that his protests against the excesses of the terror led to his imprisonment, which would in all probability have terminated in his decapitation but for the counter revolution of July, 1794.

The question as to whether Dr. Guillotin did invent the guillotine is a debatable one, the weight of evidence favoring Dr. Ball's contention; but I think the following from *Galignani's Messenger*, under date of Feb. 4, 1857, worth quoting:

"A dealer in old iron and cast-away articles, residing at Lyons, found two days ago among a lot of miscellaneous matter sold to him, a small copper case containing two autograph letters from Dr. Guillotin to Robespierre, dated at Lyons, Jan. 7, 1792, detailing the advantages, promptitude and absence of pain in the punishment of death effected by the guillotine, which he had just invented. In one of these letters he requested him to ask Danton to send in a favorable report to the legislative assembly, and to speak himself in favor of the invention. The second letter is one of thanks to Robespierre, for having supported his application to the assembly. It bears the date of March 27, 1792, exactly one week having elapsed since the guillotine had been adopted as an instrument of death, and thanks voted to the inventor."

And again in "*Abrégé Historique de la Révolution Francais*," published in 1802 or 1803, we find: "The gallows was replaced on May 31, 1791, by a new machine called the guillotine, after Dr. Guillotin, who invented it, carrying off the prize from Mirabeau, but for which it would have been called *Mirabelle*." This being a pun on the word *Mirabelle*, which was also the name of a plum.

Dr. Guillotin's celebrated remark may also aptly be mentioned, "*Moi, avec ma machine, je vous fais sauter la tête d'un clin d'oeil, et vous ne souffrez pas.*"

These few abstracts from the literature on this subject will, I think, prove that I should not be so severely criticised for saying what I did. I prefaced my paper read before the Philadelphia County Medical Society with these words, "I care not to seem morose nor to add to the seriousness of our rather gloomy topic of discussion, so if I interlard my obituary notices with a few anecdotes it is but to lighten the dark and musty pages of medical history and to make my remarks a little less tiresome."

Some there are doubtless who would say, as well take the hatchet from George Washington, as the guillotine from Joseph Ignatius Guillotin; perhaps if truth were known you would find among them WILLIAM PEPPER, M.D.

The Prescribing of Proprietaries.

EVANSTON, ILL., Jan. 24, 1908.

To the Editor:—In a recent editorial you seemed to imply that Mr. Bok had given a somewhat unfair impression of the present condition of medical practice in this country as regards the proprietary medicines. As endorsing his position, permit me to relate an experience.

At a recent meeting of a surgical society, one of the papers was on a troublesome variety of injury. The essayist is a professor of surgery in a recognized medical school. His position entitled us to expect a valuable and instructive article. Unfortunately, the entire paper was taken up with generalities and lamentations. Conditions were not clearly stated, and relationship of complications to the injury was not discussed. Indications for guidance in treatment were not enumerated.

In the one illustrative case mentioned this professor admitted that he often changed his treatment daily, though he gave no reason, and at least two out of three of the medicinal articles mentioned were secret proprietary goods. He was clearly trying to sail his ship without a chart, veering with every shift of the wind.

In the discussion, one speaker mentioned the fact that physicians had long enough been used by manufacturers as advertising agents without pay, and the more doctors use secret mixtures the less exact they become. He was immediately followed by a member who said in substance: "The true physician, when he looks on the sufferings of a helpless child, rises above the narrow limitations of ethical laws and takes aid wherever he can find it." He added that the "patent medicine" mentioned gave relief in such cases, but even he did not claim that this "patent medicine" was the only thing that might help. One after another of those present spoke in favor of that particular secret mixture. Some used it because it was "put up in convenient shape." Not one could tell of what it was composed, nor give any reason for its superiority.

I was surprised that the remarks on "ethics" called forth applause. Rules of ethics are not arbitrary laws, but deductions of those who have studied the subject. Webster calls ethics: "The science of human duty," and that is as good a definition as we need. Clearly the rules of ethics, whether written or not, demand of the physician or surgeon the most speedy relief possible. They demand that he shall use his best skill. He has no right to use something simply because it is "handy" and saves thinking. He must know.

But think of the effect on the spectators when the learned doctor without a struggle uses a secret mixture, the qualities of which each of them know as well as he—from the advertisements!

The remark about a "suffering child" is good oratory, but it was made in a surgical discussion. Suppose the child had been gored by a bull. Would the doctor sanction the relief of suffering by the replacement of the intestines by the dirty hands of a stable boy? Certainly not, for fear of adding an unknown infection or poison.

In the use of the secret mixture is he sure that he is not adding an unsuspected poison? Is he not blindly following empirical charlatanry?

The professor closed the discussion somewhat as follows: "I used the secret mixture mentioned because the professor of internal medicine in one of our leading colleges, suggested it. If I did wrong, he did wrong. He got me to use it." Such childish evasion of responsibility by a college professor is a disgrace. The really alarming feature is not that a secret drug was used, but that men who should be leaders do not recognize that such an act is a public confession of their absolute incompetence, and to that degree it stamps them with the mark of quackery.

HENRY B. HEMENWAY.

Vocal Fremitus in Pleural Effusions.

PHILADELPHIA, Jan. 25, 1908.

To the Editor:—In THE JOURNAL, Dec. 7, 1907, appears an interesting and valuable note by Dr. W. J. Calvert on "Increased Vocal Fremitus in Pleural Effusions. The increase or persistence of the voice vibrations is, as Dr. Calvert states, most unusual in the effusions of adults; but it does not seem to be generally appreciated that in infants and young children this phenomenon occurs with comparative frequency. I have repeatedly satisfied myself of this and have demonstrated it to, and have had my observation confirmed by internes at the Children's Hospital, Philadelphia.

The character of the fremitus, while it constitutes one of the most valuable means of diagnosis of pleural effusions, I have come to regard as unreliable in young children, because I have found it so variable: unchanged, retained or even increased. This fact, together with the frequency of bronchial breathing and voice over the fluid, has led to many mistakes in diagnosis.

In making these remarks, I am not alluding to the increased fremitus present in all large effusions beneath the clavicle and in the inner scapular region, and due to the compressed lung; but to a fremitus observed lower down over the effused fluid itself.

I know of no American pediatric writer who mentions the phenomenon now under discussion; but it has frequently been commented on by English authors (Eustace Smith among others). The explanation given by Dr. Calvert that increased fremitus in pleural effusions is due, in most instances, to intrathoracic tension is probably correct; but it will not account for its comparative frequency in infancy and childhood.

D. J. MILTON MILLER.

Carbon Dioxid Not Cause of Death Following Use of Antitoxin.

BEDFORD, IND., Jan. 21, 1908.

To the Editor:—In THE JOURNAL, January 18, Dr. Lewis M. Gainer of Wake Forest, N. C., commenting on a death from diphtheria antitoxin, suggests that the excess of carbon dioxid in the blood may have produced an irritability of the respiratory centers and that the antitoxin may have added to that irritability and produced death. In laryngeal diphtheria a marked cyanosis is often seen, due to lack of oxygen and excess of carbon dioxid; in these cases it is my rule to give from 5,000 to 8,000 units of antitoxin for an initial dose in any child from 3 to 8 years old. I have never seen any untoward results even when the dyspnea and cyanosis were extremely marked. The thought came to me that there must have been some other cause for death in this case. Physicians should never hesitate to give large doses of antitoxin in laryngeal diphtheria; the greater the cyanosis the larger the dosage.

C. H. EMERY, M.D.

Book Notices

ROYAL COMMISSION ON VIVISECTION. Appendix to the Third Report of the Commissioners. Minutes of Evidence, April to July, 1907. Pp. vi-266. Price, 2s. 2d. London: Wyman & Sons, Limited, 109 Fetter Lane, E. C., 1907.

This volume contains the testimony of a number of prominent physiologists and others on both sides of the question. Besides the representatives of the antivivsection societies at whose instance the commission took up the subject, we have here the utterances on the subject of such authorities as Sir T. Lauder Brunton, Mr. Henry Morris, F.R.C.S., Major Rogers of the Medical College of Calcutta, Sir H. R. Swanzy, Prof. E. A. Schäfer, Dr. C. J. Martin and Dr. D. W. Buxton, lecturer on anesthetics in the University College Hospital of London. Drs. Brunton, Morris, Rogers, Swanzy and Schäfer review the history of physiologic progress, showing how much of it is due to animal experimentation and how the older investigators in this line, like Hales, Bell, and later Claude Bernard and others, laid down the foundations by experiments on animals on which our modern knowledge of physiology is based. Mr. Henry Morris gives a diagram, showing how Lister's early work on inflammation, etc., and that of Pasteur led up to Lister's work on the treatment of wounds, from which has branched off the science of bacteriology on the one hand, with all its medical bearings and the possibilities of modern operative surgery on the other, neither of which would have been possible without the knowledge obtained by animal experimentation. Thus the causes of the various infectious diseases could never have been discovered in any other way, and the facts we possess in regard to immunity and serum therapy could only have been obtained in this way, to say nothing of the advances in diagnosis, knowledge of the life history of pathogenic germs, which is absolutely necessary to our ability to resist them, and all the hygienic and surgical improvements which have made commonplaces in our day of life-saving and pain-saving operations never before thought of. Morris gives a partial list of diseases (including diphtheria, tetanus, hydrophobia, anthrax, glanders and exophthalmic goiter) our power to cure, prevent or relieve which is directly dependent on animal experimentation, and he quotes also the researches now being made on cancer as giving a hope for still further progress in this direction. Major Rogers of the Indian Medical Service gives an account of the work already done in regard to the cure of snake bites and the control of rinderpest in

India. Dr. Swanzy demonstrates how experiments on animals have advanced the treatment of eye diseases, and Professor Schäfer demonstrated their advantages in physiologic investigation and instruction. Dr. Martin explains what has been done in serum therapy and its indebtedness to vivisection, and his testimony is a very complete summary of the subject, notwithstanding the fact that he was examined largely by one of the commission who seems to have posted himself in the statistics, such as they are, that have been published, apparently throwing discredit on the method.

The blue book concludes with an admirable presentation of the ethical side of the subject by the Right Hon. Sir J. Fletcher Moulton, Lord Justice of Appeal, to which reference is made below.

The whole mass of testimony before the commission in this report ought to give the British legislators the information that will bring about a reform in the legal regulations that now cripple investigation in Great Britain

The inquiry divides itself naturally into three parts:

1. Is the existing (British) law against unnecessary cruelty in experiments on animals adequately enforced?

2. Are experiments on animals of real scientific value and use, and if so, to what extent?

3. Are such experiments justifiable at all on ethical grounds?

With No. 1, as being purely local in its scope, we are not concerned.

We may dismiss No. 2 with the remark that by far the larger number of antivivisectionists are not by training competent to form a sound opinion thereon. This was specifically admitted by one of the witnesses on the ethical side of the question. The Rev. Mr. Lewis said: "If I wanted a guide in morality I should go to these (sundry eminent theologians and philosophers). If I wanted a guide for utility I should go to the doctor." On the other hand, those who by training are presumably competent to express an opinion worthy of consideration on the utility, and whose opinion is adverse, are small in number, and, with the exception of a few names that may be counted on the fingers, no greater in weight. The ordinary rules of evidence and criticism, then, can not be disregarded in this inquiry, and the enormous mass of evidence in support of the incalculable value (according to an overwhelming majority of the competent experts), of animal experimentation to physiology, one of the foundation stones of scientific medicine, to the science and art of both medicine and surgery, and, in a lesser degree, to the adequate training of the physicians and surgeons of the future, can not be set aside in favor of the contrary opinion expressed by an almost insignificant minority, both in number and weight.

There remains for consideration the ethical problem, and this problem must be squarely faced. With a view to that end, we will endeavor to reproduce it as it was set forth in their evidence by those witnesses who gave evidence against vivisection from the moral standpoint as they viewed it. Their propositions may fairly be syllogistically stated as follows:

1. In deciding on the lawfulness of anything, moral considerations are superior to, and must precede, utilitarian ones.

2. Morality says that the infliction of pain is unjustifiable unless it has in view, in part at least, the benefit of the particular individual on whom it is inflicted.

3. Therefore, however useful to humanity at large the infliction of pain in experiments on animals may be (if conceded), it is still immoral because in no case is it practiced with the benefit of the particular animal experimented on in view.

The major premise is conceded. The minor premise is denied and proof called for. That is offered as follows:

1. It is unlawful to pervert anything from the use that God (or Nature) has intended it for.

2. Pain was intended to preserve the life and promote the future happiness of the individual on whom it is permitted to fall.

3. Therefore, to inflict pain for any object that has not in view, in part at least, the preservation of the life or the promotion of the future happiness of the individual is a perversion of the intention of pain, and consequently, unlawful.

Now, while the minor premise in this case can not perhaps be flatly denied, it is certainly not proved, and we have a right to challenge its supporters for proof. If there is one subject in moral philosophy that, more than any other, has occasioned much disputation, challenged the serious attention of moralists, and resulted in manifold theories in explanation without approaching a definite settlement, it is the purpose of pain in the scheme of the universe. We can only charitably assume that those gentlemen and ladies who so glibly dispose offhand of so complex a problem have scarcely qualified themselves by such a study of their subject as is usually expected from experts of any kind. The Rev. Mr. Page Hopps, after expressing his "doubts" as to the utility of such experiments and also giving utterance to the argument against infliction of pain except for the individual sufferer's benefit, asked, "What law of God or Nature justifies this treatment of our poor relations?" Mr. Hopps admits that he is in a position of doubt as to the (moral) lawfulness of killing animals for food, but another witness, the Rev. Mr. Lewis, has no scruples on that score. Both may be referred to Genesis 1:26: "And God said, Let us make man in our image after our likeness, and let him have dominion over the fish of the sea, and over the fowl of the air, and over the cattle, and over all the earth, and over every creeping thing that creepeth upon the earth;" also to a parallel passage in Psalm 8:6, 7 and 8. Now, the right of dominion necessarily implies the right to constrain the freedom and to use, by the subversion of the ordinarily admitted rights of the individual, subject only to the necessities of the case conditioned by a due proportion of respective rights and interests involved; and this involves the right of life and death, provided the necessities be urgent enough. On this supposition only can it be held justifiable to take life, even in self-defense. How much more, then, is this the case in regard to the killing of animals for food! For though it is true, as the Rev. Mr. Lewis says, that animal teeth were given us to eat meat with, the most ardent advocate of a mixed diet for the human race could not argue, in the face of the millions of non-meat-eaters in the world, that the use of animal food is absolutely essential to the preservation of life, or even of a fair state of health.

But there is still a stronger problem for the meat-eating antivivisectionist to encounter. It was pointed out by the commission that the painful operation of castration was practiced yearly on millions of animals to make their meat more palatable and perhaps more nutritious (to say nothing of the castration of animals to make them more tractable as beasts of burden). Every person who eats meat is sharing for his esthetic gratification in the result of a painful operation on animals in which the benefit of the victim does not enter into consideration. To be sure, Mr. Lewis expressed his opinion that, so far as he knew, many animals "led a much happier life because that operation had been performed than they would have done otherwise," though he discreetly forebore to state on what grounds he based that opinion. Mr. Lewis made the suggestion, it is true, that the animals ought to be anesthetized before castration; and, to the objection that there would not be anesthetics enough in the world, he replied that a realization of the necessity would soon make the supply equal to the demand. But even that proviso would not be applicable in another instance that was adduced, in reference to the 21,000 deaths that occur annually in India from snake bites. When asked whether a fatality of such magnitude would not ethically justify inoculation experiments on animals to test the value of a proposed remedy, Mr. Hopps replied that he would rather "go for the snakes." Considering the nature of the snake, the methods necessary to "go for it" can not conceivably be divorced from the necessity for inflicting pain, and assuming that the reverend gentleman would have the snakes all anesthetized before being killed, and that the supply of anesthetics was sufficient to meet all demands,

who is going to do the anesthetizing? Would the reverend gentleman volunteer at a good salary? It would be worth it to the community.

We must, then, deduce that since man has the right to kill for his benefit without regard to the benefit of the individual victim in some instances, and since it is impossible that in all instances in which he has the right to kill he can avoid inflicting pain, it follows of necessity, since the greater includes the less, that the axiom so dogmatically stated, that man has no right to inflict pain unless the benefit of the victim is in part at least an object, falls to the ground, and the question is one merely of degree, that is to say, one of the relative proportion between the pain inflicted and the benefits looked for; thus the direct antithesis between morality and utility ceases to exist as an absolute relation. We consequently find ourselves back again at the point that the justification for the infliction of pain depends on the relation between the suffering inflicted on the individual subject and the probable benefit to the dominating community, which is a question of fact on which, according to the testimony of the Rev. Mr. Lewis, it is the part of wisdom to go to the doctors as a guide.

Sir John Fletcher Moulton, one of the justices of appeal, in a masterly exposition of the ethical and utilitarian propriety of animal experimentation, made the point that there were two kinds of pain, pain inflicted and pain prevented, and indicated that the well-meaning sentimentalists who opposed all vivisection were so entirely lost in the consideration of the pain inflicted that they overlooked the far larger proportion of pain, preventable and prevented, through experiments on animals. If we have succeeded in showing that both results need not necessarily occur in the same individual, his reasoning must be regarded as absolutely irrefutable.

Finally, to those who have followed the antivivisection crusade these many years past, the name of the Hon. Stephen Coleridge will need no introduction. The best commentary on his ethical pleadings (which open with a parody in ten counts, each commencing with the phrase, "I am here to charge the home office officials," in obvious but feeble imitation of Zola's famous "*J'accuse*" in the Dreyfus case) is the reproduction of his reply when asked why he would not put credence in the assertions of any vivisectionist: "They would deny a breach of the act, just as I should deny a breach of the motor-car act. I drive a motor car, and when I go beyond the speed limit, and a policeman asks me, I say, 'No, I am not going beyond the speed limit.'"

This answer will perhaps help us to understand how it came about that so experienced a witness, and a lawyer besides, had no less than seven times to retract or modify his statements when challenged.

Verily, those "specialists in morality," the Rev. Mr. Hopps and the Rev. Mr. Lewis, as they view their associates in the defense of morality, may well exclaim with the poet:

"Misery acquaints a man with strange bedfellows."

GYNECOLOGY AND ABDOMINAL SURGERY. Edited by Howard A. Kelly, M.D., F.R.C.S. (Hon. Edin.), Professor of Gynecologic Surgery at the Johns Hopkins University, and Charles P. Noble, M.D., Clinical Professor of Gynecology at the Woman's Medical College, Philadelphia. Illustrated by Hermann Becker, Max Brödel and Others. Volume I. Cloth. Pp. 851. Price, $8.00 net. Philadelphia: W. B. Saunders Co., 1907.

The first volume of this work contains twenty-five chapters written by sixteen authors. All of the writers are well known and many of them have international reputations. Excellent discrimination has been shown in the assignment of the subjects, and where differences of opinion still exist, as to the method of choice in a given condition, each side has its own advocate to present its claims. In this manner both sides of the subject are thoroughly covered and one is thus better able to judge as to the method of election in a particular case. The subject of pathology is all considered in one chapter, which not only permits condensation, but also prevents unnecessary repetition. The chapter on medical gynecology is a commendable one. The writer points out very clearly that every woman who appears with a complaint is not necessarily a subject for some operation on her reproductive organs, that many of them not only need no operation, but are actually made worse by one. The illustrations, which are numerous, are nearly all original and up to the standard of the well-known artists. From the character of the first volume a very flattering reception at the hands of the profession can be predicted for the work.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

TREATMENT OF BOTULINUS POISONING.

LOS ANGELES, CAL., Jan. 4, 1908.

To the Editor:—Is there any successful method of treating botulinus poisoning? In the only three cases of which I know, due to eating canned pork and beans, although treated by good physicians, the patients all died. IRWIN N. FRASSE, M.D.

ANSWER.—Poisoning by meat includes several different processes and the success of treatment will naturally vary with the particular form involved. The most acute form is a ptomain poisoning due to a poison already formed in the meat or other nitrogenous matter, such as beans, probably most commonly by the agency of the *Bacillus botulinus*, which has been identified in a number of epidemics of sausage poisoning. One of the most interesting epidemics of this sort was due, not to sausage, but to preserved beans. The *Bacillus botulinus* was identified in the beans. The cases occurred at Darmstadt in January, 1904. Twenty-four persons ate of the beans, of whom 21 were taken sick and 11 died, a mortality of 52 per cent. (Fischer, *Zeitschrift f. klin. Med.*, lix, p. 58). In this epidemic Collatz treated four persons (*Berlin. klin. Wochschr.*, Oct. 30, 1905). One died, a second recovered, and Collatz treated the remaining two with the serum of the second patient taken during convalescence. Improvement set in after the serum treatment was begun and progressed to final recovery. The experiments of Kempner have shown that goats can be protected by an antitoxic serum, but it is of no avail unless used within twenty-four hours after the beginning of the poisoning. A. Tchitchkine (*Ann. d. l'Institut Pasteur*, 1905, xix, p. 335) found that animals may acquire immunity, but it is very weak and requires a long course of treatment. G. Morelli says that the following symptomatic treatment is useful: Washing the stomach, high enemata for the constipation and pilocarpin for dryness of the skin and mucous membranes. In the second class, cases of meat poisoning are caused by a rapid infection with the paratyphoid bacillus of the type B, which causes an acute gastroenteritis accompanied by fever and general constitutional symptoms. V. Krehl and A. Kahn report (*Wien. med Wochschr.*, liv, p. 2163), 8 cases caused by the paratyphus bacillus. Trautmann also favors the view that meat poisoning is due to an acute infection with paratyphoid bacilli (*Berlin. klin. Wochschr.*, xliii, 1102). A. Stoll reports 7 cases of fish poisoning due to the *Bacillus paratyphosus*, type B (*Correspondenzblatt f. Schweizer Aerzte*, xxxv, p. 137). For these acute affections with the paratyphoid bacillus nothing but symptomatic treatment seems to be available. It is always good practice to wash out the stomach and give colonic flushings to cleanse the lower intestinal canal. Bismuth for the vomiting or diarrhea is appropriate. The strength should be sustained by appropriate tonics, and the action of the skin and kidneys maintained. Hypodermic injection of normal salt solution may be used to stimulate the kidney. Meat poisonings of the third class are more chronic infections with bacilli usually of the paratyphoid group, pursuing a course more or less analogous to typhoid fever and requiring very similar treatment.

DOES BLAUD'S MASS DETERIORATE WITH AGE?

CLEVELAND, OHIO, Jan. 13, 1908.

To the Editor:—Do compressed tablets containing Blaud's mass, strychnin and arsenic deteriorate with age, or are they efficient, say, for two years? If not, why? F. W. L.

ANSWER.—The tendency of ferrous carbonate—Blaud's mass—to take up oxygen and to evolve carbon dioxid, thus forming ferric oxid, is so great that various expedients have been tried to preserve ferrous carbonate in the ferrous condition for medicinal use. This has been accomplished in the pilula ferri carbonatis by mixing the ingredients with very small quantities of water and by the addition of sugar, etc., to prevent oxidation. These precautions prevent immediate oxidation, but they can not prevent the eventual change into ferric oxid. The pharmacologic authorities, including the U. S. Pharmacopeia, advise that these pills be freshly prepared. We find no data from which it can be stated how long the pills will keep or what their degree of efficiency would be at the end of a given time. It is probable from a theoretic standpoint, however, that at the end of two years the ferrous carbonate would have

been completely converted into the ferric oxid. Ferric oxid, after thorough drying, is likely to become practically insoluble in dilute acids, and it is insoluble in alkalies, so that it would be deprived of all therapeutic efficiency. The compressed tablet is not a desirable form in which to administer such a combination of medicines as that above referred to. It would be preferable for you to combine such quantities of strychnin and arsenic as you find necessary with the official pill mass and have made the requisite number of pills or capsules. You may use instead of the pil. carbonatis the massa ferri carbonatis or Vallet's mass. In case the pilula ferri carbonatis is prescribed the prescription should take the following form:

R.	Strychninæ sulphatis .....gr. 1/100	00065
	Arseni trioxidi .....gr. 1/100	00065
	Pil. ferri carbonatis, No. 1.....	

Misce ft. pil vel capsula No. 1: fac pilulas centum similes.

A prescription like the above not only has the advantage of securing the efficiency of the ferrous carbonate, but also enables the physician to vary the proportions of the ingredients at will.

TREATMENT AFTER IMMEDIATE REPAIR OF PERINEUM.

———, WASH., Dec. 17, 1907.

To the Editor:—What is the best after-treatment of immediate repair of the perineum? L. B.

ANSWER.—In cases of repair of incomplete laceration of the perineum, the management of the puerperium does not differ materially from that of the puerperium when no laceration exists. With normal lochia no vaginal douches should be given. If the discharge becomes offensive, showing contamination, vaginal douches of sterile water, normal salt solution or boric acid should be given two or three times a day. The external vulvar region should be washed with an antiseptic solution when the pad is changed, and especially after urination or defecation. The pad should be large enough to form an occlusion dressing, and should be changed frequently so that it is never saturated. The patient need not be catheterized if she can urinate spontaneously. The bowels should be moved with a mild laxative, such as senna or cascara. The external stitches if of silkworm gut are generally removed on the tenth day unless they become infected, when they should be removed at once. It is not necessary to bind the legs together and the patient may move around in bed. If the laceration is complete more care must be given to the emptying of the bowels; otherwise the management is the same as in repairs of lacerations of the first and second degrees. On the third day repeated small doses of senna and cascara should be given to render the feces soft, then three ounces of olive oil should be injected into the rectum with a soft rubber syringe (a three-ounce ear syringe), and a soap solution enema administered to secure the evacuation. The physician himself should attend to this first bowel movement unless the patient is in the care of a well-trained nurse. The perineal region is well irrigated during and after the bowel movement. Subsequent daily movements are secured and managed in the same way.

NUCLEIN HAS LITTLE THERAPEUTIC VALUE.

ST. PAUL, MINN., Jan. 11, 1908.

To the Editor:—What is the present status of opinion regarding the therapeutic value of nuclein, given by mouth and hypodermically? EDWIN OLANDER.

ANSWER.—The following quotations fairly represent the views held by the profession:

Sollmann (Text-Book of Pharmacology, 2d edition, 1906, p. 301) says: "These nucleins have of recent years been extensively tried for various obscure affections, and so far it is impossible to say anything definite about them."

Hare (Therapeutics, 12th edition, 1907, p. 360) says: "Nuclein has been used with asserted success in the treatment of the ordinary forms of pulmonary tuberculosis and for septicemia. Theoretically, it should prove useful in combating any infectious process, but practically nuclein has proved of little value and is not generally employed."

H. C. Wood (Therapeutics, 12th edition, p. 530) says: "An organic remedy whose value is very problematical is the so-called nuclein."

BOUGARD'S PASTE.

WELLSBORO, PA., Jan. 13, 1908.

To the Editor:—For skin cancers I have used for some time the following preparation, known as Bougard's paste, and have obtained good results. The formula was taken from the *Medical News* about ten years ago.

Wheat flour,		
Starch, āā	15	ʒss
Arsenous acid.....	32	gr. v
Red sulphid of mercury,		
Hydrochlorate of ammonia, āā.....	1 16	gr. xviii
Bichlorid of mercury.....	13	gr. ii

Mix in mortar and add five ounces of hot water, half an ounce of chlorid of zinc and five grains of hydrochlorate of cocain. Spread on a cloth or adhesive plaster about ⅛ inch thick. Apply it to the part affected and leave it in place for about twenty-four hours. Considerable pain and swelling ensue and a slough comes away in about four days. Sometimes a second application is necessary. After the slough separates, any mild dressing will do. I generally use boric-acid ointment. The chlorid of zinc is probably the ingredient which does the good. I do not believe that the cocain is of any value. If the parts are dry, they should be abraded before applying the paste. C. W. WEBB, M.D.

CUBAN ITCH AND SMALLPOX IMMUNITY.

CORONA, S. D., Jan. 16, 1908.

To the Editor:—1. What is meant by Cuban itch? Is it distinctive, and has it any relation to smallpox or chickenpox? 2. Is it the opinion of medical authorities that a natural immunity exists in children whose parents and grandparents have been repeatedly vaccinated? Is it relied on to any extent. L. B. PROUTY.

ANSWER.—1. A similar query was answered in THE JOURNAL, April 13, 1907, p. 1283. After the Spanish-American war in 1898, an epidemic of smallpox of a very mild character prevailed extensively throughout the northern United States. By many, this epidemic was attributed, probably correctly, to the introduction of the disease by returned soldiers from Cuba and the Philippines. In many localities, in consequence of the mildness of the disease, its true character was not recognized, and it was variously styled "Cuban itch," "Philippine measles," etc. While these cases were genuine smallpox it is probable that the same term has been applied to other exanthemata and to other forms of skin disease.

2. No. Immunity is not inherited but must be acquired by the individual.

COMPARISON OF OLIVE OIL AND LINSEED OIL.

RED WING, MINN., Jan. 17, 1908.

To the Editor:—Can you tell me the difference between the action of olive and linseed oil? If linseed oil were purified, would it not answer the purposes that olive oil does? M. H. CREMER.

ANSWER.—No particular difference can be made between the physiologic action of linseed oil and olive oil. Both act as fats available for nutrition, but, on account of its disagreeable smell and taste, linseed oil is little used. It is regarded as a laxative, and is said to be especially serviceable for this purpose in hemorrhoids. Linseed oil is a combination of glycerin with a special fatty acid, which is more readily oxidized than oleic acid, and it may be that this difference in the acid radicals would cause a corresponding difference in the therapeutic properties. Nothing appears to be known, however, to justify attributing to it any special therapeutic value other than its laxative action already noticed. The dose is from one to two ounces. It is sometimes added to laxative enemata, and may be substituted for olive oil on account of cheapness in cases in which regular injections of oil are given for spastic constipation. Linseed oil is used at all in medicine, it should be borne in mind that the raw linseed oil is the only form suitable for internal use, even though lead is no longer used in preparing the boiled oil as was formerly the custom.

OXYGEN INHALATIONS.

CLINTON, MISS., Jan. 13, 1908.

To the Editor:—Please give me some information on the technic, quantity, etc., in the administration of oxygen in cyanosis of pneumonia. I find this recommended by many authors, and would like to know the best means of administration. R. W. HALL, M.D.

ANSWER.—The technic of oxygen inhalations is simple. The gas is inhaled in an unmixed state from the tank in which it has been compressed. These tanks are provided with a wash bottle, through which the gas bubbles, and a mouth-piece by which outside air is mostly excluded. The rate of escape of the gas can be regulated by turning a stopcock attached to the tank.

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending Jan. 25, 1908:

Ebert, R. G., surgeon, relieved from duty in the Philippines Division, and will proceed on the transport to sail from Manila about March 15, 1908, to San Francisco, and on arrival report by telegraph to the Adjutant General of the Army for further orders.

Harris, J. R., asst.-surgeon, ordered to proceed to the Army General Hospital, Presidio of San Francisco, for observation and treatment.

Jones, H. W., asst.-surgeon, relieved from duty in the Philippines Division, and assigned to duty in the Army Transport Service.

Palmer, F. W., asst.-surgeon, granted 10 days' leave of absence.

Richards, R. L., asst.-surgeon, advanced to the rank of captain.

Holmes, T. G., contract surgeon, granted leave of absence for one month.

Kleruff, H. F., contract surgeon, ordered to duty at Fort Apache, Ariz., at expiration of present leave of absence.

Wall, E. M., contract surgeon, ordered from Fort Oglethorpe, Ga., to Fort Monroe, Va., for temporary duty.

Nemans, H. W., contract surgeon, relieved from duty in the Philippines Division, and ordered to the United States for assignment to station.

Whinnery, J. C., dental surgeon, ordered from Vancouver Barracks, Washington, to Fort Liscum, Alaska, for temporary duty, and thence to Fort Lawton, Washington for temporary duty.

Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending Jan. 25, 1908.

Strine, H. F., P. A. surgeon, detached from the Naval Hospital, Annapolis, M.D., and ordered to Washington, D. C., January 20, for special temporary duty, and thence to the *Relief*.

Fitts, H. B., surgeon, ordered to the Naval Recruiting Station, Indianapolis.

Riggs, R. E., P. A. surgeon, detached from the Naval Academy and ordered to the Naval Station, Charleston, S. C., for temporary duty, and thence to Camp Columbia, Havana, Cuba.

Iden, J. H., P. A. surgeon, detached from duty in connection with the Cape Cruz-Casilda survey expedition, with headquarters at Manzanillo, Cuba, and ordered to continue other duties.

Wheeler, L. H., asst.-surgeon, detached from the Naval Recruiting Station, Indianapolis, and ordered to Washington, D. C., January 27, for examination for promotion, and then to wait orders.

Allen, A. H., asst.-surgeon, detached from duty with the Marine detachment at Lajas, Cuba, and ordered to duty with the Cape Cruz-Casilda survey expedition, with headquarters at Manzanillo, Cuba.

Schmidt, L. M., Mackenzie, E. G., asst.-surgeons, appointed asst.-surgeons from Dec. 28, 1907.

Wells, H., medical director, ordered to duty at the Naval Recruiting Station, New York.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon General, Public Health and Marine-Hospital Service, during the week ended Jan. 24, 1908:

SMALLPOX—UNITED STATES.

Alabama: Mobile, Jan. 4-11, 2 cases, 1-14, 10 cases; Mobile County, 9 cases.
California: Oakland, Dec. 1-31, 24 cases; Los Angeles, Dec. 28-Jan. 4, 11 cases.
Connecticut: New Britain, Dec. 1-30, 1 case.
District of Columbia: Washington, Jan. 4-11, 2 cases.
Illinois: Jacksonville, Jan. 4-11, 3 cases.
Indiana: Elkhart, Jan. 4-11, 2 cases; Indianapolis, Jan. 5-12, 2 cases; La Fayette, Jan. 6-13, 1 case.
Kansas: Wichita, Jan. 4-11, 12 cases.
Louisiana: New Orleans, Jan. 4-11, 6 cases.
Michigan: Grand Rapids, Jan. 4-11, 1 case; Saginaw, Dec. 29-Jan. 11, 23 cases.
Missouri: St. Louis, Jan. 4 11, 3 cases.
New York: Niagara Falls, Jan. 4-11, 1 case; New York, 2 cases.
North Carolina: Greensboro, Jan. 4-11, 9 cases.
Ohio: Cincinnati, Dec. 27-Jan. 10, 7 cases; Dayton, Jan. 4-11, 3 cases.
South Dakota: Sioux Falls, Jan. 3-10, 9 cases.
Tennessee: Knoxville, Dec. 28-Jan. 11, 7 cases; Nashville, Jan. 4-11, 14 cases.
Texas: Houston, Jan. 1-11, 3 cases; San Antonio, Jan. 4-11, 2 cases.
Utah: Twenty-seven counties, Dec. 1-30, 48 cases, 1 death.
Washington: Spokane, Dec. 28-Jan. 4, 1 case.
Wisconsin: La Crosse, Jan. 4 11, 2 cases; Milwaukee, Dec. 21-Jan. 11, 4 cases.

SMALLPOX—FOREIGN.

Brazil: Para, Dec. 21-28, 10 cases, 4 deaths; Rio de Janeiro, Dec. 8-15, 33 cases, 9 deaths.
China: Hongkong, Nov. 16-23, 1 case, 1 death; Shanghai, Dec. 1-15, 5 cases among Europeans and 17 deaths among natives.
Ecuador: Guayaquil, Dec. 15-21, 2 deaths.
France: Marseilles, Dec. 1-31, 9 deaths.
Great Britain: Leith, Dec. 22-28, 1 case.
India: Bombay, Dec. 10-17, 5 deaths; Calcutta, Nov. 30-17, 3 deaths.
Italy: General, Dec. 19-26, 52 cases.
Java: Batavia, Nov. 30-Dec. 7, 3 cases, 1 death.
Russia: Moscow, Dec. 14-21, 7 cases, 3 deaths; Odessa, 2 cases.
Spain: Denia, Dec. 21-28, 4 cases; Vigo, 2 deaths.
Venezuela: Caracas, to Jan. 3, 3,000 cases, estimated (275 cases and 5 deaths reported Dec. 13 as yellow fever should have been included under smallpox); La Guaira, to Jan. 3, 25, estimated.

YELLOW FEVER.

Brazil: Para, Dec. 21-28, 16 cases, 8 deaths.
Cuba: Habana Province: Guanamon, Jan. 16-19, 2 cases, 1 death; Santa Clara Province, Cienfuegos, Jan. 17-20, 3 cases, 2 deaths; Palmira, Dec. 31-Jan. 19, 3 cases, 1 death.
Ecuador: Guayaquil, Dec. 14-21, 1 death.

CHOLERA—INSULAR.

Philippine Islands: Manila, Nov. 21-28, 8 cases, 8 deaths; Nov. 28-Dec. 7, 3 cases, 2 deaths.

CHOLERA—FOREIGN.

India: Bombay, Dec. 10-17, 2 deaths; Calcutta, Nov. 28-Dec. 7, 262 deaths; Madras, Dec. 7-13, 4 deaths; Rangoon, Nov. 28-Dec. 7, 15 deaths.

PLAGUE.

Brazil: Rio de Janeiro, Dec. 8-15, 6 cases, 1 death.
Egypt: Alexandria, Dec. 13-25, 4 cases, 3 deaths; Diametta, Dec. 22-28, 1 case; Provinces: Assiout, Dec. 19-30, 21 cases, 15 deaths; Minieh, Dec. 17-30, 1 case.
India: Bombay, Dec. 10-17, 11 deaths; Calcutta, Nov. 23-Dec. 7, 39 deaths; Rangoon, Nov. 28-Dec. 7, 5 deaths.
Kavak: Plague erroneously reported, January 17.

Medical Economics

An Organization Problem.

In the January issue of the *Southern California Practitioner* appears the address of the retiring president of the Los Angeles County Medical Society, reviewing the work of the society for the past year. Many of the recommendations made by the retiring president are worthy of notice, but one is especially timely. This is to establish branches of the county society in different towns remote from the regular society meeting place.

In the eastern states, which are densely settled and well provided with transportation facilities, and which have, in the main, comparatively small counties, it is not often difficult for all the physicians of a county to meet at a centrally located place. But in many of our central and western states, where counties are large and transportation poor, it is often hard to find any one place which is accessible to all the members.

To meet this difficulty various plans have been proposed. One is to hold the meetings at different places in different months; this is only partially satisfactory, as it means that members of the profession living in a certain town have an opportunity to attend a medical society meeting only occasionally. The organization of independent societies in different parts of the county should be discouraged, since this is a reversion to the old condition of disconnected and unrelated organizations which the present system of reorganization, with the county society as the unit, was intended to remedy.

The most successful solution of this difficulty is that which has been adopted in Chicago, Philadelphia and some of the larger and more populous counties, viz., that of dividing the county into definite districts and organizing in them branch societies subordinate to and forming a part of the main county society. In this way, unity of organization and uniformity of machinery is maintained and, at the same time, medical society meetings are placed within the reach of all.

County Societies Endorse Movement Against Fraudulent Proprietaries.

The medical societies of the following counties recently adopted resolutions regarding nostrums promulgated by the Kentucky State Medical Association:

Union County, Miss.
Montgomery County, Pa.
Black Hills District, S. D.
Clearfield County, Pa.
Defiance County, Ohio.
Robertson County, Texas.
Somerset County, N. J.
Hill County, Texas.
Elk County, Pa.
Whatcom County, Wash.
Lorain County, Ohio.
Huron County, Mich.

These resolutions were also adopted by the following:

Dallam, Hartley and Sherman County (Texas) Medical Society.
Panhandle Medical Association (N. M.).

In addition to adopting these resolutions, the following expressions of sentiment were adopted:

The Huron County (Mich.) Medical Society expressed its "disapproval of the publication of so-called medical journals in the interest of manufacturers of nostrums."

The Whatcom County (Wash.) Medical Society condemned the practice of receiving samples purporting to be beneficial or curative in many cases, declaring that "the practice of receiving and dispensing many of these samples with unmeaning names and uncertain formula is a curse to the profession and a positive injury to the public. It is the obvious intention of manufacturers that many of these samples shall fall into the hands of the laity and thereby be a means of building up direct trade with the public through the drug stores. The routine practice of prescribing nostrums is a positive detriment to any physician, is unscientific, and should be condemned. We do not approve of druggists carrying advertisements in the daily papers calling the attention of the public to consumption cures, cancer cures, asthma cures, epilepsy cures, venereal cures and female regulators. . . . We denounce in unmeasured terms the practice of physicians giving testimonials. Furthermore, this society does not approve of medical journals carrying nostrum advertisements."

The Lorain County (Ohio) Medical Society declared it to be unethical for any member to lend his name as an endorsement to any proprietary preparation. A motion was carried

that members of the society, as well as members of all the other societies of the state, be urged to refuse to support medical journals advertising unethical preparations, and also to return sample copies of such journals with a statement of the reason for their refusal. A motion was also adopted that it be considered unethical for any member of the society to contribute articles to any journal recommending or advertising products not approved by the Council on Pharmacy and Chemistry.

The St. Louis Medical Library.

The weekly bulletin of the St. Louis Medical Society, January 23, contains the following item regarding the St. Louis Medical Library Association:

A VALUABLE ASSET.

A very important asset to the medical profession of this city is the Medical Library Association. Jan. 11, 1899, Drs. S. Pollock, A. Ravold, A. Alt, F. J. Lutz, W. B. Outten, J. M. Ball and J. H. Duncan met in the parlors of the West End Hotel for the purpose of devising measures and means for securing a much-needed first-class medical library for the physicians of St. Louis. June 9, 1899, the association rented a small room in the Y. M. C. A. Building, and began business with a few volumes on the shelves and fourteen contributed medical journals. Dr. S. Pollock gave about 800 volumes to the association, and this contribution was in fact the nucleus for the development of the present 11,000 volume library. During the organization period of the association, Dr. S. Pollock was chairman, and Dr. F. L. Henderson was secretary. Dr. N. B. Carson has been president of the association ever since its organization, and has done much to make the project such a pronounced success. Dr. F. J. Lutz, the librarian, and the other charter members, deserve great credit for their untiring efforts and financial assistance.

It is indeed to be regretted that a larger number of the medical men of St. Louis have failed to avail themselves of the advantages of the St. Louis Medical Library Association. At our very threshold we have one of the most complete libraries in the middle west. We urge every member of the St. Louis medical profession to come forward and join the association and embrace the valuable opportunity offered thereby.

All who are familiar with this Medical Library Association and its excellent work will agree that nothing has been accomplished in St. Louis which could not be done in any other large city if there were only a few aggressive, far-sighted physicians to take the lead. The rapidity with which a library grows, both in size and value, is little short of marvelous. The important thing is to begin such a movement and to acquire a room and a small collection of books as a nucleus. Growth thereafter will depend on the energy and devotion of those in charge. A study of the history and development of the St. Louis Medical Library Association is commended to the members of the profession in all of our larger cities which are not already provided with suitable libraries.

POSTGRADUATE COURSE FOR COUNTY SOCIETIES.

DR. JOHN H. BLACKBURN, DIRECTOR.
BOWLING GREEN, KENTUCKY.

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

Fifth Month.

SECOND WEEKLY MEETING.

Osteomyelitis.

Acute Suppurative.

Etiology: Age. Preceding diseases. Organisms usually found. Local conditions. Pathologic anatomy. Portion of bone primarily involved. Changes in bone. Symptoms. Modes of onset. Course of disease. Physical signs. Differential diagnosis. Treatment. (a) Acute osteomyelitis, (b) acute epiphysitis, (c) osteomyelitis with suppurative synovitis, (d) osteomyelitis after open wound; treatment of each.

Necrosis of Bone.

Etiology. Preceding diseases of bone. Pathologic changes leading to formation of sequestrum. Symptoms. Diagnosis. Treatment. In primary stage. After separation.

Caries of Bone.

Etiology: Principal causes. Pathologic anatomy. Differentiate between caries and necrosis. Symptoms. Differentiate symptoms and diagnostic signs. Treatment. In detail.

Tumors of Bone.

Demonstrate microscopic sections. In what ways may tumors occur? Primary. Secondary. Exostoses. Forms. Symptoms and treatment of each. Chondroma. Occurrence. Diagnosis and treatment. Sarcoma of bone. (a) Spindle-celled, (b) round-celled, (c) myeloid; location, pathology and symptoms. Metastatic malignant bone tumors. Sarcoma, carcinoma, hypernephroma.

Medical Education and State Boards of Registration

COMING EXAMINATIONS.

NEVADA State Board of Medical Examiners, Carson City, February 3. Secretary, Dr. S. L. Lee, Carson City.

NEW YORK State Board of Medical Examiners, Albany, February 4-7. Chief of Examinations Division, Charles F. Wheelock, Albany.

NEBRASKA State Board of Health, State Capitol Building, Lincoln, February 5-6. Secretary, Dr. E. J. C. Sward, Oakland.

KANSAS State Board of Medical Registration and Examination, February 11. Secretary, Dr. D. P. Cook, Clay Center.

WYOMING State Board of Medical Examiners, Laramie, February 12-14. Secretary, Dr. S. B. Miller, Laramie.

Missouri November Report.—Dr. J. A. B. Adcock, secretary of the Missouri State Board of Health, reports the written examination held at St. Louis, Nov. 19-21, 1907. The number of subjects examined in was 12; total number of questions asked, 90; percentage required to pass, 75. The total number of candidates examined was 34, of whom 18 passed and 16 failed. The following colleges were represented:

PASSED. College.	Year Grad.
Howard University, Washington	(1907)
Northwestern Univ. Med. School	(1901) (1906)
Kentucky School of Med.	(1907)
Harvard Med. School	(1903)
Tufts Coll. Med. School	(1906)
Washington University, St. Louis	(1904) (1907)
University Med. Coll., Kansas City	(1907)
St. Louis Coll. of P. and S.	(1906) (2, 1907)
American Med. Coll., St. Louis	(1905) (1907)
Barnes Med. Coll.	(1905) (1907)
Jefferson Med. Coll.	(1883)
University of Virginia	(1907)

FAILED.	
College of P. and S., Chicago	(1902)
Bennett Coll. of Ecl. Med. and Surg.	(1895)
Kentucky School of Med.	(1907)
Washington University, St. Louis	(2, 1907)
Barnes Med. Coll.	(1904) (1906) (3, 1907)
St. Louis Coll. of P. and S.	(1906)
St. Louis University	(2, 1906) (1907)
American Med. Coll.	(1907)
Lincoln Med. Coll.	(1907)

Maryland Homeopathic December Report.—Dr. Joseph S. Garrison, secretary of the Board of Medical Examiners representing the Maryland State Homeopathic Medical Society, reports the written examination held at Baltimore, Dec. 3, 1907. The number of subjects examined in was 9; total number of questions asked, 70; percentage required to pass, 75. The total number of candidates examined was 3, of whom one passed and 2 failed. One reciprocal license has been issued since the examination held in June. The following colleges were represented:

PASSED. College.	Year Grad.	Per Cent.
Southern Homeopathic Med. Coll., Baltimore	(1907)	80.2

FAILED.		
Southwestern Homeo. Med. Coll., Louisville	(1906)	59.5*
Maryland Med. Coll.	(1907)	58.5

LICENSED THROUGH RECIPROCITY.	Year Grad.	Reciprocity with.
New York Homeo. Med. Coll. and Hospital	(1904)	Dist. Colum.

* Second examination.

Arizona January Report.—Dr. Ancil Martin, secretary of the Board of Medical Examiners of Arizona, reports the written examination held at Phoenix, Jan. 6-7, 1908. The number of subjects examined in was 9; total number of questions asked, 90; percentage required to pass, 75. The total number of candidates examined was 7, of whom 6 passed and one failed. The following colleges were represented:

PASSED.

College.	Year. Grad.	Per Cent.
University of Southern California	(1906)	79.9
Marion-Sims College of Medicine	(1896)	83.3
Barnes Med. Coll.	(1906)	75.5
St. Louis College of P. and S.	(1893)	77.8
University of Pennsylvania	(1892)	75
Jefferson Med. Coll.	(1900)	84.3

FAILED.

Ft. Worth University	(1900)	65.4

North Dakota January Report.—Dr. H. M. Wheeler, secretary of the North Dakota State Board of Medical Examiners, reports the written examination held at Grand Forks, Jan. 7-9, 1908. The number of subjects examined in was 14; percentage required to pass, 75. The total number of candidates examined was 10, of whom 7 passed and 3 failed. Four reciprocal licenses were granted at this examination. The following colleges were represented:

PASSED.

College.	Year. Grad.	Per Cent.
Rush Med. Coll.	(1897)	75
Hamline University	(1907)	78, 82
University of Nebraska	(1907)	82
Medical Coll. of Ohio	(1906)	81
University of Toronto, Ontario	(1907)	86
McGill University, Quebec	(1907)	88

FAILED.

Dearborn Med. Coll.	(1906)*	
Bennett Coll. of Ecl. Med. and Surg.	(1907)*	
University Med. Coll., Kansas City	(1901)	73

LICENSED THROUGH RECIPROCITY.

	Year Grad.	Reciprocity with.
College of P. and S., Chicago	(1906)	Iowa
University of Minnesota	(1905) (1906)	Minnesota
University of Michigan	(1893)	Michigan

* Percentage not given.

Rhode Island January Report.—Dr. Gardner T. Swarts, secretary of the Rhode Island State Board of Health, reports the written examination held at Providence, Jan. 2-3, 1908. The number of subjects examined in was 7; total number of questions asked, 70; percentage required to pass, 75. The total number of candidates examined was 9, of whom 3 passed (including 2 non-graduates), and 6 failed. The following colleges were represented:

PASSED.

College.	Year. Grad.	Per Cent.
Tufts Coll. Med. School	(1907)	80.0

FAILED.

Baltimore Med. Coll.	(1907)	67.5
Maryland Med. Coll.	(1907)	68.6
Baltimore University	(1904) 65.7; (1907)	66.3
Tufts Coll. Med. School	(1906)	74.5
Leonard Med. School	(1906)	71.2

Marriages

HARVEY H. OLDS, M.D., to Miss Jennie Linch, both of Corry, Pa., January 15.

FRED M. RICHMOND, M.D., to Miss M. Marion Rice, both of Everett, Mass., January 9.

GEORGE THADEUS BROWN, M.D., to Mrs. Avis Boyce, both of Atlanta, Ga., January 28.

ARTHUR ROWLEY REYNOLDS, M.D., to Mrs. Mary Bond Cone, both of Chicago, January 21.

LAY GORDON BURROUGHS, M.D., to Miss Essie Raymond, both of Collinsville, Ill., January 15.

WALTER VAN S. LEVY, M.D., Baltimore, to Miss Evelyn Jane Bull, in Washington, January 16.

HENRY KUEHNE, M.D., Dallas, Texas, to Miss Pansy Alexander of Austin, Texas, Dec. 31, 1907.

GEORGE S. HUNTINGTON, M.D., to Mrs. Alice Kidd Carmalt, both of New York City, January 16.

LINSLY RUDD WILLIAMS, M.D., to Mrs. Paul Leicester Ford, both of New York City, January 18.

MARION O. BIGGS, M.D., Bowling Green, Mo., to Miss Belle Buckner of Mexico, Mo., January 15.

RICHARD C. SHEPHERD, M.D., Scranton, Pa., to Miss Lulu Tupper of Plymouth, Wis., January 2.

GEORGE DOUGLAS WHITE, M.D., to Miss Agnes H. Metze, both of Jersey City, N. J., January 15.

FRANCIS E. HARRINGTON, M.D., to Miss Maye Llewellyn Eliot, both of Washington, D. C., January 9.

NATHANIEL BOWDITCH POTTER, M.D., New York City, to Miss Mary Sargent of "Holm Lea," Brookline, Mass., January 25.

Deaths

Augustus Van Cleef, M.D. Berkshire Medical College, Pittsfield, Mass., 1861; of Scranton, Pa.; acting assistant surgeon, U. S. Army, 1862 to 1863; assistant surgeon, First New York Volunteer Cavalry, 1864 to 1865; later on duty with the First U. S. Cavalry under General Sheridan, and brigade surgeon during the Civil War; a member of the Military Order of the Loyal Legion of the United States; physician to the Lackawanna County jail, 1886 to 1890, and again in 1895; United States pension examining surgeon from 1886 to 1889, and from 1890 to 1893; died in the State Hospital, Scranton, January 11, after a long illness, aged 74.

Jared Y. Dale, M.D. University of Pennsylvania, Department of Medicine, Philadelphia, 1863; a member of the American Medical Association; secretary of the Center County (Pa.) Medical Society; formerly professor of anatomy and physiology at the Pennsylvania State College, and consultant to the Phillipsburg and Bellefonte hospitals; was stricken with paralysis while making a professional call at State College, and died a few hours later at his home in Lemont, January 14, aged 67.

Eugene Zeile, M.D. University of Würzburg, Germany, 1897; of San Francisco; a member of the Medical Society of the State of California and San Francisco County Medical Society and the German Surgical Society; lecturer and demonstrator of operations in Cooper Medical College, San Francisco; committed suicide at the Alameda Sanitarium, Nov. 21, 1907, by shooting himself while despondent on account of paraplegia, from which he had suffered for three years, aged 38.

Samuel Alexander Baxter, M.D. Cincinnati College of Medicine and Surgery, 1863; assistant surgeon of the Eighteenth Ohio Volunteer Infantry, then acting medical director of the Department of Georgia during the Civil War; and later health officer, mayor and banker of Lima, Ohio; died at Christ's Hospital, Cincinnati, January 5, from cerebral hemorrhage, which occurred while he was about to be operated on for cancer, after an illness of twenty-four hours, aged 68.

Charles Edward Lippitt, M.D. National Medical College, Washington, D. C., 1856; who assisted in the capture of John Brown, and served throughout the Civil War as assistant surgeon of the Fifty-seventh Virginia Infantry, C. S. A., and later as senior surgeon of Armistead's Brigade; died at his home in "Elmington," near Ferryville, Va., Dec. 20, 1907, from cerebral hemorrhage, after an illness of twelve days, aged 79.

W. Joaquin Morrill, M.D. University of Havana, Cuba, 1861; surgeon of the One Hundred and Thirty-seventh New York Volunteer Infantry during the Civil War; surgeon in the Spanish army in the Cuban rebellion, from 1866 to 1870; and surgeon during the yellow fever epidemic at Vera Cruz; died at his home in Poughkeepsie, N. Y., January 14, aged 66.

Stephen Franklin Pomeroy, M.D. Yale Medical School, New Haven, 1855; a member of the Massachusetts and Hampden District medical societies; for 25 years a member of the staff of the Springfield Hospital, and one of the oldest practitioners of Springfield; died at his home in that city, January 11, from nephritis, after an illness of three weeks, aged 80.

Phillip M. Catchings, M.D. Medical Department of the Tulane University of Louisiana, New Orleans, 1870; a member of the Mississippi State Medical Association and Copiah County Medical Society, and one of the best known practitioners of southern Mississippi; died at his home in Georgetown, January 12, from pneumonia, aged 59.

Alfred Hedges Scofield, M.D. University of Pennsylvania, Department of Medicine, Philadelphia, 1891; of Windber, Pa.; attending physician and assistant surgeon to the Windber General Hospital; died at Glenmary Sanitarium, near Owego, N. Y., January 10, from nervous prostration, after an illness of three weeks, aged 42.

Frank R. Brunner, M.D. Jefferson Medical College, Philadelphia, 1861; for several terms a member of the legislature from Berks County, Pa.; state senator in 1885, and a member of the school board of Eshbach; was burned to death in a fire which destroyed the Boyertown Opera House, January 13, aged 72.

James B. Hayes, M.D. American Medical College (Eclectic), St. Louis, 1878; a veteran of the Civil War; was stricken with heart disease January 15, while delivering his address as commander and toastmaster at a banquet of his G. A. R. Post at Carrollton, Ill., and died at his home a day later, aged 63.

Paul Oscar Esbjorn, M.D. University of Iowa, College of Medicine, Iowa City, 1897; of Stanton, Iowa; a member of the

Iowa State and Montgomery County medical societies; died at the Augustana Hospital, Chicago, January 18, a week after an operation on the stomach, aged 37.

T. L. Andrews, M.D. Castleton (Vt.) Medical College, 1845; editor of the *Marietta* (Ohio) *Intelligencer*, and of the *Journal of Commerce*, St. Joseph, Mo.; a practitioner of Creston, Iowa; died at his home in that place, from senile debility, after an illness of several months, aged 88.

Louis Griffith Sparrow, M.D. University of Maryland, School of Medicine, Baltimore, 1853; once a member of the legislature, and coroner of Baltimore County; died at his home in Baltimore, January 14, from senile debility following fracture of the hip, two years ago, aged 79.

Alfred B. Matthews, M.D. University of Georgia, Medical Department, Augusta, 1900; a member of the American Medical Association; a prominent young practitioner of Elberton, Ga.; died at his home in that place from pneumonia, January 13, after an illness of six days.

William S. Findlay, M.D. University of Pennsylvania, Department of Medicine, Philadelphia, 1854; assistant surgeon of the Forty-third Tennessee Infantry, C. S. A., during the Civil War; died at his home in Sparta, Tenn., January 16, after a protracted illness, aged 80.

Joseph Coffey, M.D., L.R.C.S. Ireland, 1883; formerly a surgeon in the British Army; a member of the New York board of health, and at one time physician to the Tombs; died suddenly in a café in New York City, January 17, from cerebral hemorrhage, aged 48.

Charles Morris Klock, M.D. New York University Medical College, New York City, 1876; a member of the medical societies of the State of New York and County of Montgomery; died at his home in St. Johnsville, January 17, after a long illness, aged 50.

John D. Henning, M.D. Jefferson Medical College, Philadelphia, 1878; a member of the North Dakota Medical Association and Cass County Medical Society; died at his home in Fargo, January 20, from cardiac dropsy, after a prolonged illness, aged 58.

Moses C. Duncan, M.D. Atlanta (Ga.) Medical College, 1873; a member of the Tennessee Medical Association and Monroe County Medical Society; died at his home in Madisonville, January 18, from heart disease, after an illness of three weeks, aged 51.

Calvin H. Wetmore, M.D. Berkshire Medical College, Pittsfield, Mass., 1864; for twenty-six years a practitioner of Emporia, Kan.; died at his home in Catskill, N. Y., January 12, from cerebral hemorrhage, after a short illness, aged 79.

Robert Edward Lee Barnum, M.D. Atlanta (Ga.) Medical College, 1884; a member of the American Medical Association; died at his home in Richland, Ga., January 3, from cerebrospinal meningitis, after an illness of four weeks, aged 44.

José Lopez de Victoria, M.D. College of Physicians and Surgeons in the City of New York, 1886; a native of Porto Rico; died at his home in New York City, January 12, from heart disease, after an illness of several months, aged 42.

Robert David Spalding, M.D. University of Louisville (Ky.) Medical Department, 1856; of Atlanta, Ga.; a surgeon in the Confederate service during the Civil War; died suddenly at the home of his cousin in Atlanta, Nov. 29, 1907, aged 74.

Albert S. Warner, M.D. College of Physicians and Surgeons of St. Joseph, Mo., 1881; Sioux City (Iowa) College of Medicine, 1893; died suddenly from heart disease, in his drug store in Butte, Neb., January 9, aged 48.

Howell T. Eskew, M.D. Medical College of Indiana, Indianapolis, 1882; a veteran of the Civil War, and health officer of Lapel, Ind.; died at his home in that place, January 15, after a prolonged illness, aged 65.

August Rooch, M.D. Washington University, Medical Department, St. Louis, 1855; of North St. Louis; died suddenly while making a professional call, January 13, from cerebral hemorrhage, aged 80.

James L. Dunn, M.D. Western Reserve University Medical College, Cleveland, 1860; surgeon during the Civil War, and local pension examiner; died at his home in Titusville, Pa., January 14, aged 85.

William Harmong Lamar, M.D. Southern Botanico-Medical College, Macon, Ga.; died at his home in Jasper, Ala., Nov. 16, 1907, from senile debility, after an illness of two weeks, aged 80.

William R. Winters, M.D. New York University Medical College, New York City, 1879; died at his home in Silverton, Colo., January 7, after an illness of several years, aged 55.

Emil Maurer, M.D. Medico-Chirurgical College, Philadelphia, 1890; died at his home in Philadelphia from pneumonia, January 17, after an illness of several days, aged 42.

John Alexander Knight, M.D. Trinity Medical College, Toronto, Ont., 1899; of Newberry, Mich.; died at the home of his father in Toronto Junction, Ont., January 13.

Charles W. Russell, M.D. Rush Medical College, Chicago, 1870; township trustee; died at his home in Riley, Ind., January 16, after an illness of eight months, aged 63.

James A. Griffin, M.D. University of Nashville (Tenn.) Medical Department, 1857; died at his home near Friendship, Tenn., January 11, from pneumonia.

Franklin F. Ferry, M.D. Jefferson Medical College, Philadelphia, 1887; of New Paris, Pa.; died in Silver City, N. M., from tuberculosis, January 16, aged 48.

Miscellany

The Earliest Modern Law for the Regulation of the Practice of Medicine.

In an editorial THE JOURNAL called attention to the first law for the regulation of the practice of medicine of which we have any definite record in modern history. It contains so many clauses that were meant to correct abuses, with which the medical profession is concerned at the present moment, so many definite directions as to the relations of physicians to the community, to the authorities and to druggists, which we are prone to think that the medical profession and our legislators have only come properly to consider in recent years, that it has seemed worth while to present it in its entirety. It is to be found in "Studies in the History of Anatomy in the Middle Ages," by Robert Ritter von Toeply,[1] which is one of the important contributions in the history of medicine made in recent years. The book is comparatively little known in America and that makes it all the more advisable to present the actual words of the law, for it is represented only in abstracts in the histories of medicine written by Haeser and Puschmann.

According to Haeser, the law was published in 1241, or according to Winkelmann, in 1240. (Von Toeply quotes it from Huillard-Brehollis' Diplomatic History of Frederick II, with Documents, which consists of twelve quarto volumes. Paris, 1851-1861.) This is one of the wonderful sets of documents that came from Frederick II, surnamed the Hohenstaufen, the German emperor of the time, whom most historians are agreed in proclaiming the most remarkable historical figure of the Middle Ages. He was the grandson of Frederick II, was elected king of the Romans in 1196, and his father dying the next year, he was crowned king of Sicily. At this time the kingdom of Sicily included not only what we now call the island of Sicily, but also the lower part of Italy, which was then called Greater Sicily or the kingdom of Naples. This was all that Frederick inherited, but by his own efforts he succeeded in making himself the emperor of Germany, or as the office was then called, because the incumbent was at least supposed to be a successor to the power of the Roman emperors, the Holy Roman Emperor. His genius for government will probably be best revealed to physicians at least by this wonderful piece of medical jurisprudence which we quote:

LAW OF FREDERICK II, REGULATING MEDICAL PRACTICE.

"While we are bent on making regulations for the common weal of our loyal subjects we keep ever under our observation the health of the individual. In consideration of the serious damage and the irreparable suffering which may occur as a consequence of the inexperience of physicians, we decree that in future no one who claims the title of physician, shall exercise the art of healing or dare to treat the ailing, except such as have before-hand in our University of Salerno passed a public examination under a regular teacher of medicine and been given a certificate, not only by the professor of medicine but also by one of our civil officials, which declares his trustworthiness of character and sufficiency of knowledge. This

1. Studien Zur Getschichte der Anatomie im Mittelalter, Robert Ritter von Toeply, Leipzig und Wien, Franz Deuticke, 1898.

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document must be presented to us, or in our absence from the kingdom, to the person who remains behind in our stead in the kingdom, and must be followed by the obtaining of a license to practice medicine either from us or from our representative aforesaid. Violation of this law is to be punished by confiscation of goods and a year in prison for all those who in future dare to practice medicine without such permission from our authority.

"Since the students can not be expected to learn medical science unless they have previously been grounded in logic, we further decree that no one be permitted to take up the study of medical science without beforehand having devoted at least three full years to the study of logic.[2] After three years devoted to these studies he (the student) may, if he will, proceed to the study of medicine, provided always that during the prescribed time he devotes himself also to surgery, which is a part of medicine. After this, and not before, will he be given the license to practice, provided he has passed an examination, in legal form, as well as obtained a certificate from his teacher as to his studies in the preceding time. After having spent five years in study he shall not practice medicine until he has during a full year devoted himself to medical practice with advice and under the direction of an experienced physician. In the medical schools the professors shall during these five years devote themselves to the recognized books, both those of Hippocrates as well as those of Galen, and shall teach not only theoretic but also practical medicine.

"We also decree as a measure intended for the furtherance of public health that no surgeon shall be allowed to practice, unless he has a written certificate, which he must present to the professor in the medical faculty, stating that he has spent at least a year at that part of medicine which is necessary as a guide to the practice of surgery, and that, above all, he has learned the anatomy of the human body at the medical school, and is fully equipped in this department of medicine, without which neither operations of any kind can be undertaken with success nor fractures be properly treated.

"In every province of our kingdom which is under our legal authority, we decree that two prudent and trustworthy men whose names must be sent to our court, shall be appointed and bound by formal oath, under whose inspection electuaries and syrups and other medicines be prepared according to law and only be sold after such inspection. In Salerno in particular we decree that this inspectorship shall be limited to those who have taken their degree as masters in physic.

"We also decree by the present law that no one in the kingdom except in Salerno or in Naples [in which were the two universities of the kingdom.—ED.] shall undertake to give lectures on medicine or surgery, or presume to assume the name of teacher, unless he shall have been very thoroughly examined in the presence of a government official and of a professor in the art of medicine. [No fake medical schools. —ED.]

"Every physician given a license to practice must take an oath that he shall faithfully fulfill all the requirements of the law, and in addition that whenever it comes to his knowledge that any apothecary has for sale drugs that are of less than normal strength, that he shall report him to the court, and besides that he shall give his advice to the poor without asking for any compensation. A physician shall visit his patient at least twice a day and at the wish of his patient once also at night, and shall charge him, in case the visit does not require him to go out of the village or beyond the walls of the city, not more than one-half tarrene in gold for each day's service.[3] From a patient whom he visits outside of the village or the wall of the town, he has a right to demand for a day's service not more than three tarrenes, to which may be added, however, his expenses, provided that he does not demand more than four tarrenes altogether.

"He (the regularly licensed physician) must not enter into any business relations with the apothecary nor must he take any of them under his protection nor incur any money obligations in their regard.[4] Nor must any licensed physician keep an apothecary's shop himself. Apothecaries must conduct their business with a certificate from a physician according to the regulations and on their own credit and responsibility, and they shall not be permitted to sell their products without having taken an oath that all their drugs have been prepared in the prescribed form, without any fraud. The apothecary may derive the following profits from his sales: Such extracts and simples as he need not keep in stock for more than a year, before they may be employed, may be charged for at the rate of three tarrenes an ounce. [Ninety cents an ounce seems very dear, but this is the maximum.] Other medicines, however, which in consequence of the special conditions required for their preparation or for any other reason, the apothecary has to have in stock for more than a year, he may charge for the rate of six tarrenes an ounce. Stations for the preparation of medicines may not be located anywhere but only in certain communities in the kingdom as we prescribe below.

"We decree also that the growers of plants meant for medical purpose shall be bound by a solemn oath that they shall prepare their medicines conscientiously according to the rules of their art, and so far as it is humanly possible that they shall prepare them in the presence of the inspectors. Violations of this law shall be punished by the confiscation of their movable goods. If the inspectors, however, to whose fidelity to duty the keeping of the regulations is committed, should allow any fraud in the matters that are entrusted to them, they shall be condemned to punishment by death." [The first pure drug law.—ED.]

DIPLOMA.

The diploma which went with the law and which we would call a license, is very interesting as an anticipation of many modern ideas. It runs as follows:

"We hereby make it known to all our loyal citizens that our loyal citizen, N. M., having presented himself at our court and been properly examined, has been recognized by the court as a loyal citizen and one descended from a worthy race and as properly fitted for the practice of the medical art. Therefore, we, convinced of his knowledge and his readiness to obey the laws, after receiving his oath of fidelity to us and his oath to exercise his profession in a true manner according to the customs of physicians, granted him the license to practice the medical art in every part of our kingdom, on condition that he exercise his art faithfully as becomes our dignity and our fidelity to our subjects, as well as for the good health of those who need his services. Therefore, we bring this matter to the knowledge of our faithful subjects so that no one may disturb this our loyal subject, N. M. aforesaid, in the practice of his art nor in any way hinder him in any part of our domains."

This is so different from what is usually thought to have been the condition of medical practice and so striking an anticipation of everything that is most modern in the regulation of medicine that one almost hesitates to accept it as authentic. A word as to its authoritativeness and as to the channel through which it comes may not be out of place. There is no doubt that it is an original document of the time of Frederick II. It occurs in connection with other documents of undoubted origin and date. As already stated, the present version comes to us through the German of Robert Ritter von Toeply, who is considered probably the best living authority in Germany on the history of medicine, and especially anatomy in the Middle Ages. He was selected by the editors of Puschmann's "Handbook of the History of Medicine," the most recent authoritative work on the subject, to write the chapters on the history of anatomy in the Middle Ages.

Plague Investigations in India.

From the reports of the advisory committee appointed by the Secretary of State for India, the Royal Society and the Lister Institute, the following interesting facts and conclusions

2. Under logic at this time was included the study of practically all the subjects that are now taken up in the arts department of our universities. Huxley, in his address before the University of Aberdeen, on the occasion of his inauguration as rector of that university said: "The scholars (of the early days of the universities, first half of the thirteenth century) studied grammar, rhetoric, arithmetic and geometry, astronomy, theology and music." He added: "Thus their work, however imperfect and faulty judged by modern lights, it may have been, brought them face to face with all the leading aspects of the many-sided mind of man. For these studies did really contain, at any rate in embryo—sometimes, it may be, in caricature—what we now call philosophy, mathematical and physical science, and art. And I doubt if the curriculum of any modern university shows so clear and generous a comprehension of what is meant by culture as the old trivium and quadrivium does." Science and Education Essays, page 197; New York, D. Appleton & Co. 1896.

3. A tarrenus or tarrene in gold was equal to about thirty cents of our money. Money at that time had from ten to fifteen times the purchasing power that it has at the present time. An ordinary workman at this time in England received about two pence a day and an ox could be bought for less than two shillings.

4. Apparently many different ways of getting round this regulation had already been invented and the idea of these expressions seems to be to make it very clear in the law that any such business relationship no matter what the excuse or the method of it, is forbidden.—ED.

may be drawn (U. S. P. H. and M.-H. S. *Public Health Reports, Journal of Hygiene*, September 1906, and July 1907):

When rats are confined so that there can be no means of communication except by fleas passing from an infected rat to a healthy one, contact with excreta being excluded, infection by plague may arise in the rat previously healthy. That this is not due to aerial infection is shown by the fact that when fleas from an infected animal were transferred to the cage of a healthy rat the plague was communicated. Experiments were also conducted on guinea-pigs and monkeys confined in go-downs or warehouses carefully constructed to exclude the access of rats. Using these go-downs, experiments were conducted in which epidemic plague did not occur when healthy guinea-pigs lived in close contact with plague-infected guinea-pigs under conditions where access of fleas was prevented, but in which, under otherwise similar conditions, plague spread among the healthy animals in places where fleas were abundantly present. Close contact of plague-infected animals with healthy animals, if fleas are excluded, does not give rise to an epizootic of plague among the latter. Close contact of young, even when suckled by plague-infected mothers, does not give the disease to the former. An epizootic of plague may start without direct contact of healthy animals and infected animals. It having been shown by direct experiment that the rat flea can convey plague from rat to rat, experiments of a similar nature with the fleas removed from the infected go-downs were recorded. Infection can take place without any contact with contaminated soil. Animals exposed to aerial infection, but protected against the access of fleas by the use of "tanglefoot," escaped.

Guinea-pigs allowed to run free in plague-infected houses attracted a considerable number of rat fleas and a certain proportion of them caught the plague. Even after the ordinary disinfection of such houses rat fleas could be caught in them and were found capable of conveying the plague. The number of rat fleas found in plague-infected houses was twelve times as great as that found in control houses. In the stomachs of such fleas bacilli microscopically indistinguishable from the plague bacillus were frequently found. It has been proved experimentally that the rat flea will bite man, even in the presence of its natural host, if the fleas are present in large numbers.

While the blood of the rat may contain as many as 100,000 plague bacilli per cubic centimeter, the urine and feces contain comparatively few and do not seem to be important sources of infection. The number of bacilli in the blood of men suffering from the plague is variable and the microscopic examination of the blood can not be regarded as a trustworthy criterion of the degree of septicemia.

In the diagnosis of the plague in rats the presence of a typical bubo is the most important sign. The next important sign is the condition described as granular liver. This condition in the experience of the committee, has not been met with in rats other than those that are plague infected. The spleen is pronounced to be a much less important organ for diagnostic purposes than the liver; in this respect, it is said, the latter takes the place of the spleen in guinea-pigs.

Hemorrhages, both subcutaneous and in the organs, are very suggestive features. They occurred somewhere in no less than 54 per cent. of the rats in the first series. It is noted that the subcutaneous hemorrhages constitute a most important sign of plague in rats. Again an abundant clear pleural effusion goes a long way of itself toward establishing a diagnosis of the disease. In putrid rats at least three of these signs may persist and when recognized are of the greatest assistance, viz., a bubo, granular liver and pleural effusion.

Microscopic examination is directed toward the discovery of the plague bacillus and the tissues usually examined are the bubo, the spleen and the heart's blood, with the greater probability of finding the organisms in the organs in the order named. In the bubo the bacilli are apt to exhibit involution forms.

It is stated that there is no room for doubt that for purposes of diagnosis, naked-eye examination by a competent observer is more satisfactory than microscopic examination alone. Diagnosis by the cutaneous reaction produced by shaving the abdomen of a guinea-pig so that bleeding points are visible, and rubbing it with infected material, especially the contents of a bubo, is very satisfactory. The reaction usually occurs about twelve hours after inoculation. The method is especially valuable in the case of putrid rats. It apparently fails in 10 per cent. of suspected putrid rats. Of course, some of these may not have been infectious.

Rats may become infected by being fed the bodies of their own species dead of the plague, but in this case the bubo is mesenteric, and as the primary bubo is rarely or ever intestinal in natural infection, it is concluded that rats do not become infected by eating the carcasses of their comrades. The fact that the primary bubo indicates the seat of inoculation has been experimentally shown and from this fact, coupled with the fact that in 5,000 examinations of naturally infected rats no mesenteric buboes were found, it is concluded that the natural infection does not occur by the food, but by the agency of the flea. Most of the buboes produced by natural infection are cervical.

Plague bacilli may be found in the stomachs of rat fleas for twelve days after ingestion and are believed to be capable of multiplying there. They are most abundant during the epidemic season. The bacilli may be found in the feces of the flea which may transmit the disease. The flea may remain infective in the epidemic season as much as fifteen days. A single flea, either male or female, may transmit the disease. Experiments with cat fleas were unsuccessful, and those with human fleas only partially so.

Observation shows that rats may be affected with a chronic form of plague which consists in an abscess which affects the general health of the animal to a very slight extent.

On What Conditions Can the Physician Authorize the Marriage of Syphilitics?—The *Ann. de Derm.*, December, 1907, contains an article by A. Civatte embodying the opinions of fifty-three leading clinicians of Europe and America on this question as to when to allow syphilitics to marry. With the exception of Mibelli of Parma, all the authorities consulted allow marriage after thorough treatment of the syphilis and after a certain interval ranging from two to ten years. Mibelli alone affirms that it is impossible for the physician to authorize the marriage of a syphilitic as facts are on record showing transmission of the disease after ten and twenty years, and it is impossible to determine whether the patient is entirely cured or not. He thinks that the syphilitic should be duly informed of the risks and responsibilities which he incurs and the means by which he can attenuate them, without ever succeeding in suppressing them completely. The question of marriage is then left for the patient to decide on his own responsibility. Pospelow interdicts marriage to syphilitics who have had gummata, for after this, he says, one can never be sure as to the cure, even under energetic treatment. In the case of a woman, if she has aborted or been delivered of children with the taint of inherited syphilis, he imposes mercurial and iodid treatment during seven or eight years and does not permit marriage unless then the serum diagnosis is negative. The consensus of opinion, however, seems to be that nothing in this world is perfect, and that we must put up with compromises. The authorities do not wish to take away all hope from the syphilitic, and consequently hold up before him a speedy issue out of his troubles. The shortest interval is given by the American and English authors—two years between the initial accident and marriage. Fournier requires four years of intermittent courses, with two years free from offensive recurrence of the syphilis. Herxheimer requires the longest interval—ten years. Great stress is laid by the German authorities consulted on the disappearance of glandular lesions as proof of the efficacy of the mercurial treatment, with local treatment of glandular lesions. Whether greater severity is required in case of a female syphilitic is a question suggested by this compilation which requires further study. Watraszewski warns against a special final course of treatment just before marriage, as he has witnessed the flaring up of apparently extinct syphilis under the influ-

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ence of such. Unna states that he has never known of an instance of conjugal or inherited syphilis in the family of any of his syphilitic patients who have had thorough treatment. He gives a supplementary course six weeks before marriage, applying a mercurial plaster to the scrotum, adding that he has no evidence in regard to the usefulness or necessity for this final local treatment, but that he can guarantee its absolute harmlessness. The Americans whose views are given in turn with the rest are Biddle, Corlett, Dyer, Engman, Fordyce, Hyde, Ravogli, White and Zeisler. Mendes da Costa of Amsterdam says that on account of the lack of a practical means of knowing whether the syphilis is actually cured, the physician can never unreservedly authorize the marriage of a syphilitic.

An International Esperanto League for Physicians.—We have received through Dr. H. W. Yemans, U. S. Army, an appeal (signed by Dr. Bronislaw Skalkowski, vice-director of the Polyclinic in Lwow, Austrio-Galicia; Dr. Szczepan Mikolajski, editor of the *Glos Lekarzy*, and Dr. I. Fels), in which attention is called to the value of Esperanto as a means of international communication between physicians, and the importance of making an effort to have Esperanto recognized as an official language at future medical congresses. To attain this end, it is urged that an international universal association of Esperanto physicians is advisable, which shall proceed to the committees of international congresses of physicians with the request that Esperanto be accorded equal rights with other official languages, and that this request be supported by the signatures of as many physicians as possible. Such an association, when formed, would send delegates to medical congresses, organize such congresses, and issue an organ for the exchange of ideas by physicians throughout the entire world. The constitution and rules could be settled at the next Esperanto congress; but meanwhile it is recommended that, as a preliminary, all physicians interested in the subject should register themselves, so that an estimate may be formed of their numbers. With a view to the accomplishment of this end, the above named, if a sufficient support is forthcoming, will issue a periodical in Esperanto to be known as the *International Correspondence of Physicians*. It is proposed to publish it as frequently as material shall permit, at the cost of 25 cents a number. Each number is to be primarily dedicated to a consideration of some definite problem or subject, such, for instance, as the laws of various countries relating to professional secrecy; which, in fact, has been chosen for the first topic. The essential points of the international inquiry on this subject, which we regret that space precludes our producing in its entirety, are:

1. What is the viewpoint of the law in your country in regard to the medical secret?
2. What is the viewpoint of medical ethics in your country relative to this matter?
3. What is your personal opinion relative to the duty of a physician in the possession of a medical secret? Limits and conditions of it? Cite contingently your already published dissertations relative to this question.
4. What is the voice of public opinion in your country relative to professional secrecy?
5. Other remarks and information concerning the professional secret in your country.

Should an insufficient number of phyicians respond to justify the publication of the *Correspondence*, a summary of such articles as may be received will be published in Polish in the *Glos Lekarzy*, an organ of professional, ethical and socio-medical affairs, published semi-monthly in Lwow. The latest time for receiving answers to the inquiry, articles, and also advance orders for the *International Correspondence of Physicians*, will be March 1, 1908. Communications should be addressed to Dr. Stephan Mikolajski, Sniadeckich 6, Lwow, Austrio-Galicia.

Treatment of Insanity.—A valuable contribution to the practical management of the insane is contained in the October *Bulletin of the Ontario Hospitals for the Insane*[1] which is devoted to the methods recommended and in vogue at the Rockwood Hospital, Kingston. The prevention of insanity receives due consideration and an appeal is made to the general practitioner to interest himself in this phase of the subject as by his intimate relations to his patients he enjoys special opportunities for noting the threatened danger and for advising the public and the individual to take precautionary measures before it is too late. The new history form to be filled out by the physician, before the admission of the patient, is designed to facilitate the collection of data with reference to the previous physiologic history of the patient and his relatives to help solve some of the problems relating to heredity and the various influences in the life of the individual which may be effective in precipitating mental disease. Hints as to home treatment are given, which may be summed up as follows: Patients should be cared for by a competent nurse who is not a relative and if possible forcible restraint should be avoided. Patients showing marked depression should be suspected of a suicidal tendency and everything suggesting the possibility of such an act should be removed if possible. The essential elements of treatment are: 1. Rest in bed. Attend to the elimination of waste products. Keep up the nutrition by forced feeding if necessary. 2. Try to induce sleep and calm the patient by the use of hot wet packs, and only resort to sedatives and hypnotics as a last resort. One of the prominent measures of treatment at the hospital is the continuous bath. A special bath tub is provided with wide flange so that patients can not easily grasp the side in attempts to get out. Ample provision for the overflow and escape of water and excreta is made. The patient rests on a canvas cradle and the tubs are supplied with water from a mixer, by which any desired temperature can be secured and maintained. The baths are in pairs under the care of a single nurse. The patients are kept in the bath for about eight hours daily, although in other hospitals they have been kept in them for from four to twenty days. These baths have been found of great service to a large number of patients, especially to those with affections of toxic origin. They regulate the vasomotors, expand the cutaneous vessels, secure elimination, and are sedative and hypnotic, largely replacing drugs for this purpose. A number of illustrative cases are reported. Reports of the autopsies made are given and the results of a special investigation into the frequency and etiologic importance of diphtheroid bacilli. The conclusion is that these bacilli are frequent in the nasal cavities as pure saprophytes. The association of diphtheroid bacilli in the causation of general paralysis is difficult to accept without further proof.

1. Published by Warwick Bros. & Rutter, Ltd., Toronto, Ont.

Therapeutics Judged by Figures.—Interesting facts revealing some of the tendencies of therapeutics are brought out by a study of the amounts of different remedies dispensed by the Central Pharmacy of Paris, which supplies all the hospitals, dispensaries and public charities of that city. The figures have been collated by M. L. Grimbert, who presented them to the Paris Academy of Medicine, Oct. 1, 1907 (*Journal de Pharmacie et de Chimie*, Oct. 18, 1907). He entitles the lecture "Therapeutics Judged by the Figures" to correspond with the title of a similar article formerly presented by Beurmann. The figures employed by Grimbert cover the last ten years. The amounts dispensed of the various articles are taken to indicate the popularity and probable value of the remedies. One of the most remarkable facts revealed by this examination is the steadiness with which the old remedies have held their place in spite of the large number of new remedies put on the market. The use of opium has not decreased notwithstanding the introduction of new analgesics which have gained a large vogue. There is, however, a tendency to the disuse of the remedies belonging to the antiphlogistic régime. Antimony tends to disappear, cantharides is used to a less extent than formerly, but it may astonish some to learn that the Paris hospitals still use from 10,000 to 12,000 leeches a year. The use of potassium and sodium iodid is also decreasing. The same is true of alcoholic drinks as remedies.

In conclusion the author says that the movement of medicines in the last ten years may be summed up as follows:

The old classical remedies, galenical as well as chemical, have remained stationary and that in spite of the introduction of the new synthetic products into therapeutics. The use of iodids, the salts of quinin, antipyrin, the glycerophosphate of calcium, and the cacodylate of sodium has noticeably declined.

The toxic antiseptics have fallen rapidly in favor, having

been more and more replaced by agents less dangerous to handle, such as hydrogen dioxid and solution of formaldehyd. The same is true of intestinal antiseptics, cantharides, caffein and alcoholic liquors (rum in all its forms).

The following have risen in popularity: Among the antiseptics, hydrogen dioxid, formaldehyd and the cyanid of mercury; among remedies in use at the beginning of the decade, theobromin and methyl salicylate; among the new remedies, pyramidon, aspirin, urotropin, protargol, salophen and veronal.

Detection of Gas-Producing Organisms in Milk.—The following test, known as the "Wisconsin curd test," is given in the *American Journal of Public Health*, November: 1. Sterilize the milk containers so as to destroy all bacteria in the vessels. This is important and can be done by heating the cans in boiling water or steam for not less than one-half hour. 2. Place about one pint of milk in a covered jar and heat to about 98 F. 3. Add ten drops of commercial rennet extract and mix thoroughly with the milk so as to coagulate it. 4. After coagulation cut curd fine to facilitate separation of whey; leave the curd in the whey for half an hour, then drain off whey at frequent intervals until the curd is well matted. 5. Incubate the curd from 98 to 102 F. by immersing the jar in warm water. Keep jars covered to retain odors. 6. After from six to nine hours' incubation open the jars and observe the odor; examine the curds by cutting them with a sharp knife and observe texture as to presence of pin holes or gas holes. Observe odor. 7. Very bad milks will betray the presence of gas-producing bacteria by the spongy texture of the curd and will have an off flavor. 8. If more than one sample is tested at the same time, dip the knife and thermometer in hot water before using. Milks showing the presence of gas or bad odors in any considerable degree are milks that have been more or less polluted with extraneous organisms or carelessly handled, and as a consequence such milks show a curd filled with small pin holes due to gas. It is not intended that this test should be used for absolute indication of the presence of gas-producing organisms, but rather it has been of service in the detection of the condition of market milk. Gas-producing organisms in milk may also be tested for, as in water, with glucose or lactose broth in fermentation tubes. Tests similar to presumptive tests for *B. coli* in water analysis may be made by inoculating into these broth fermentation tubes a c.c. each of the 1 to 100, 1 to 1,000 and 1 to 10,000 dilutions, or if *B. coli* organisms are to be numerically determined the milk may be plated in lactose litmus agar, red colonies counted and species tests worked out. Lactose-bile medium has also been used for the determination of *B. coli* in milk. The presence of these gas-producing organisms in abundance usually indicates dirty condition of stables, cows or vessels. In small quantities they may be found in most milks.

Society Proceedings

AMERICAN ACADEMY OF MEDICINE.

Special Meeting, held in Pittsburg, Jan. 2-3, 1908.

The President, DR. T. D. DAVIS, Pittsburg, in the Chair.

The object of this meeting was to confer with representatives of literary and medical colleges and others interested on some of the problems of medical education.

DR. CHARLES MCINTIRE, secretary of the academy, said that the academy was not on a quest for a course of minimum requirements, nor for a concession course to reduce eight years to seven, but that the wish was to determine the educational process most likely to produce at once an educated man and a student prepared to become a skilled physician, and to adjust the baccalaureate course and that leading to the doctorate, so that everything will tell and no time be lost.

Criticisms on the Present Medical Curriculum.

DR. HENRY BEATES, JR., said that the present medical curriculum is a complex made up of courses of study for the medical degree, no two of which are alike, either in value or merit. He believes that the present medical curriculum should not permit of divided examinations, whereby, at the end of two years, the fundamentals may be eliminated. He urgently insists that the fundamentals should be perpetuated throughout the full four years, not in the manner of the first two years, but as applied fundamental principles. An additional criticism is the disregard of the necessity for co-ordination in the teaching of the respective sciences.

Essentials of a Medical Education.

DR. MURRAY GALT MOTTER, secretary of the National Confederation of State Medical Examining and Licensing Boards, outlined the essentials of a medical education as: 1. An adequate preliminary training. 2. A medical curriculum based on sound pedagogic principles, well balanced and closely correlated throughout; a simplified course in which quality of work should have more weight than mere quantity. 3. The more careful selection and training of medical teachers and a greater degree of cooperation between them. 4. The subordination of the specialties to the major branches with which they are logically connected, the refinements of special practice being relegated to the postgraduate course. 5. The substitution, in so far as possible, of practical for oral and written examinations, with the preparation and defense of a thesis as a requirement for graduation. 6. Quoting from the chairman of the judicial council to the Association of American Medical Colleges, "Make your examinations at the end of the second year honestly, and require those men who can not pass their examinations to go back or get out."

The American Medical School and Its Entrance Requirements.

DR. DAVID STARR JORDAN, president of Leland Stanford, Jr., University, said that of the medical colleges of America only those can live which become integral parts of universities. This applied as well to those which without real university standards maintain a nominal connection, for purposes of advertising, with some university or college. The essentials of medical instruction were outlined as well equipped laboratories and hospitals, competent teachers, a standard of admittance which shall exclude the ignorant and those incapable of scientific conceptions, and a high standard of graduation which shall exclude unworthy men from the professional degree. The four years of a college course, spent primarily on physiology, biology and chemistry, and secondarily on languages, literature and history, give a training to which the university can set its seal of approval. The university should not be satisfied with less than seven years from the high school to the university degree of M.D. Dr. Jordan believes that the universities of America should begin with the junior year, leaving the freshman and sophomore years to the colleges and the larger high schools and preparatory schools. By this arrangement all work of the university should be regarded as professional, confined to such subjects as are needed for professional training, and the profession of teaching among the rest, with such other subjects as may give breadth of vision or personal satisfaction, but not counting as constituents of a degree. In this case the course of medicine should be lengthened to five years by the inclusion of courses in science. The plan which seems to Dr. Jordan most nearly in the line of the development of the American university system is to begin all professional work with the third or junior year of the present American college. In this case the medical course may be strengthened with another year of further scientific requirements and further clinical experience at the end.

The Danger of Attempting Too Much.

DR. FREDERICK H. GERRISH, Portland, Maine, said that medical schools are designed primarily to make general practitioners, and yet there is a marked tendency in the schools to give much valuable time to topics about which the practitioner has little occasion to know, and to ignore or slight other things which he constantly or often needs. The curriculum of the medical school should be arranged with particular reference to the needs of the general practitioner. There should be excluded all branches which are designed for mental discipline and those which do not have direct bearing on the practice of medicine.

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DISCUSSION.

DR. WILLIAM L. ESTES spoke of the great deficiency in a knowledge of anatomy exhibited by the students of all colleges of eastern Pennsylvania. He believes that this fundamental branch should be continued in a practical way through the whole curriculum. The innovation in this country of a non-medical training in physics, anatomy, chemistry and biology, he thinks may be detrimental to the general all-round medical trend which the student's education should assume.

DR. J. W. HOLLAND, Philadelphia, said that while training in universities at home and abroad makes a very fine type of medical man, it does not always make the best doctor. For biologic reasons, a man ought to be engaged at the business of life before he is 25 years of age.

DR. J. G. SCHURMAN, of Cornell University, said that Cornell, beginning with the year 1908, would admit to its medical college only college graduates or persons of equivalent training. The question of such action, however, was not one to be settled by universal rule, but was dependent on circumstances. He believes that while the elective principle in colleges is inevitable, it has been carried too far. In the years following the first two of the college course the student should study mainly the sciences before entering on the medical curriculum. Admitting that medical subjects and the pure sciences, like physiology and anatomy, should be taught by medical men, he believes that the sciences like chemistry, physics and biology, which are not so closely intertwined with the medical sciences, can be taught by faculties other than medical. He would, therefore, eliminate chemistry, physics and biology from the medical course, and the specialties he would put into the post-graduate course. There would be room between the two extremes for a good medical course.

What Are the Principles Underlying, and What Provisions Should be Included in a Medical Practice Act?

DR. ALEXANDER R. CRAIG, Philadelphia, thought that as a matter of protection to the public the law should determine the very lowest qualification that a man may have and still be a safe practitioner of medicine. The matter of reciprocity, he thought, should be one for each state to determine. In the event of a physician desiring to practice in another state, some value should attach to resolutions passed by the man's own confrères as to his fitness to practice medicine.

DR. CHARLES MCINTIRE said that the provisions of a medical practice act should give no preponderance of power to the "dominant school." Other important points mentioned by him were the necessity of a definition of what the practice of medicine really is, and that on the medical examining board should be laid the responsibility of bringing to justice illegal practitioners of medicine.

PROF. JOHN RAYMOND, Brooklyn, favors the divided examinations, whereby at the end of the second year the student may undergo examinations in the so called elementary or fundamental branches.

DR. LEE SMITH, New York, said that the New York medical practice act, while having made a compromise in the elimination of the practice of medicine, materia medica and therapeutics, is working well. The examination of students in anatomy, physiology and chemistry at the close of the second year is of great advantage.

DR. MURRAY GALT MOTTER, Washington, D. C., believes that a medical law should eliminate politics from the board of medical examiners, and should provide that such examiners should have special qualifications for their duties. The ideal condition would be that the law should require the state board to satisfy itself that the candidate is a safe man to practice medicine, and leave out all consideration of what subjects he shall be examined in, and of the length of time devoted to his preparation. If he is prepared, he is prepared. If a law were framed on that basis there would be no difficulty about licensing a man who had qualified by his practice in another state.

What Can the College and Fitting School Do to Aid in the Study of Medicine?

PROF. W. F. MERCER, Ohio University, believes that the place to save time is in the high school; also that there is an advantage in taking some scientific work along with the other work of the college course. He thinks that the medical man is making a mistake in considering that the graduate of literary colleges to-day is the same product as the graduate of twenty-five or fifty years ago. It is not generally realized that literary colleges to-day are doing better and more work in literary science than the average medical college possibly can do. It seems to him unfair that credit should not be given in the medical school for work done in the college.

What Are the Essential Subjects of General Information to be Possessed by the Physician?

DR. JAMES D. MOFFATT, president of Washington and Jefferson College, concludes that, as far as possible, the traditional college course of study should be pursued before entering on a medical education. He is not prepared to advise that all medical colleges follow at once the example of Johns Hopkins and Harvard regarding admission requirement. It is his belief that the college graduate who has made use of his opportunities will find himself better equipped to get the most out of his medical school opportunities than by saving those four years of time for his practice.

REV. A. B. CHURCH, president of Beloit College, believes that four years of college work is of avail if it does nothing more than change the ideals of young people. He does not favor the "short cuts," and feels that the time of development can not be ignored. He claims that the best educated man, not the best instructed man, is he who has the greatest number of points of contact with the world of force.

PROFESSOR BLAKE, of Lehigh University, would like to see put in operation an arrangement by which the medical colleges would certify to the character of the work done in literary colleges, and thereby make it possible for a man to get a medical degree in three years.

DR. ROBERT S. BREED, of Allegheny College, said that the ideal preliminary training for medical students should include at least four-year courses in biology. This should be followed by courses in the comparative anatomy, histology and embryology of vertebrates, with frequent references to the invertebrates. Additional training in botany, especially in general bacteriology, is highly desirable, together with training in laboratory technic. He said that it is possible to give this preliminary training in the ordinary college, and that it is an advantage that they be taught there rather than in the medical school, because they are there taught from the standpoint of their general cultural value rather than from the standpoint of their practical application, and so the student gets the broader viewpoint. The medical school should give the student the special applications of these subjects to man. He suggested that if more medical schools would adopt the plan of entrance requirements as Western Reserve and Cornell have done, and that others are thinking of doing, and would then insist that the college men have completed certain courses, it would tend to bring about a system which would put medical education on a much more satisfactory basis than it is at present.

CHICAGO MEDICAL AND CHICAGO SURGICAL SOCIETIES.

Joint Meeting, held Jan. 8, 1908.

The President of the Chicago Surgical Society, DR. A. J. OCHSNER, in the Chair.

Tuberculosis of the Tongue.

DR. WILLIAM M. HARSHA showed a case of tuberculosis of the tongue in a man, 40 years of age. He thought, at first, the case was one of epithelioma of the tongue, but before operating a microscopic examination was made, which disclosed tuberculosis. Since the removal of the involved portions of the tongue, the patient has gotten along very well.

DISCUSSION.

DR. ARTHUR D. BEVAN saw a case in 1893 similar to the one reported, although at the time he thought it was one of epi-

thelioma. The diagnosis was made by staining scrapings from the lesion of the tongue for tubercle bacilli. The man had an advanced tuberculosis of the lungs.

DR. JOHN B. MURPHY said that there is no disease of the tongue that is so hard to differentiate as tuberculosis. The so-called scrapings from the tongue are often scrapings from the lungs, in that they come up and are deposited on the tongue. The unsatisfactory part is that we do not find the typical or classical picture microscopically. There is absence of the giant cells. The epithelial cells are mixed so that they do not present the typical form under the microscope. The diagnosis, from a macroscopic standpoint, is made by the secondary enlargement of the glands, its resemblance to epithelioma, and in a number of these cases the glands, when examined secondarily, do not show typical tuberculosis, but a mixed infection. The prognosis is unfavorable even after the radical removal of as large a portion as one would ordinarly remove in a case of epithelioma of the tongue. It requires the excision of a larger portion than in a case of carcinoma to feel that the patient is free from secondary return *in loco*.

DR. WILLIAM ALLEN PUSEY has had a case of tuberculosis of the mouth and tongue. In his case the lesions corresponded to the superficial tuberculous ulcers which sometimes occur in tuberculosis of mucous membranes. A lesion on the tip of the tongue looked like a mucous patch. There were a large number of lesions on the buccal mucous membrane, and there were some lesions on the mucous membrane of the gum. There were no enlarged glands, and there were no deep ulcerative lesions. There were no tuberculous gummata. Pusey thinks that in all these cases a macroscopic diagnosis is impossible, while the microscopic diagnosis is not difficult, because, unlike other superficial lesions,the tubercle bacilli are abundant in the tissues and are easily found. This was true in his case. The man has systemic tuberculosis in the late stage. The course of the case was rapidly downward. The patient was very cachectic. He suffered such excruciating pain that eating was impossible without spraying with cocain, and within two months after the development of the disease he died. The histologic diagnosis was active miliary tuberculosis.

DR. L. L. MCARTHUR had a patient in whose case the diagnosis was made by means of the microscope. He thinks radical removal offers greater hope of recovery than in cases of carcinoma.

Prophylactic Use of the Filigree in Infected Wounds of the Abdominal Wall.

DR. WILLARD BARTLETT, St. Louis, reported 32 cases in which he had used filigree, and described the technic of its use. His experience with 36 cases seems to him to prove that it will heal in a pus wound, and he has shown it to be true in five instances, as well as in an equal number where a clean wound became infected after the implantation of such a contrivance.

DISCUSSION.

DR. D. A. K. STEELE thinks it is possible to implant a filigree in an infected wound of the abdominal wall and have its silver strands become a part of the scar tissue, prevent hernia, and cause no local irritation, even though in the lapse of time the original network may become broken or separated into fragments. He has always regarded the permanent introduction of non-absorbable material, such as silver wire, iron wire, silk or silkworm gut, into the living tissues as objectionable on account of the frequent necessity for its removal later on by reason of irritation, infection or discomfort to the patient. Many times he has been called on to remove buried loops of wire or silk that have produced distressing symptoms. He prefers autoplastic methods, and his belief is that in cases like those described by Dr. Bartlett it would be perfectly feasible to bring the muscular or aponeurotic structures in close apposition by the use of he herring-bone suture of chromicized catgut or kangaroo tendon, which will give equally as good permanent results.

DR. ALEXANDER HUGH FERGUSON has met with no case which he has not been able to handle by plastic procedures. There have been some cases in which he has refused to operate which might be suitable for the filigree. He thinks the author makes a bold statement when he advises the filigree as a prophylactic in suppurating wounds of the abdominal wall. In large gaping wounds it is much easier to insert the filigree than to effect approximation by well-known surgical methods. Its ease of application will induce many men to try it who would not undertake a plastic operation. The author's statistics are in favor of it, although he thinks sufficient time has not elapsed to prove this. The first disadvantage of the filigree is that it is a foreign body; second, its instability in the tissues; third, it is doubtful whether it is a prophylactic in such cases against hernia.

DR. M. L. HARRIS has had no experience in implanting silver wire filigrees, but he has had some experience in taking them out. His first case was a patient operated on several times, primarily for appendicitis, and then operation was undertaken subsequently to close a ventral hernia, and finally a wire mattress or filigree was implanted in the abdominal wall. It healed in nicely, but after a time it gave the patient so much trouble and so much pain that he insisted on its removal. The wire had broken into small pieces, each one of which furnished one or two ends which were sticking in the tissues.

DR. E. WYLLYS ANDREWS said that if he has a clear picture of Dr. Bartlett's paper, it is simply this: That over a row of pegs he constructs a filigree by first darning artificially, and then a natural kind of network is constructed which is able to stand alone and hold in shape. Here we have a principle analogous to that of heteroplasty, as seen in the Moorhof bone plug. With the wire network granulation tissue and connective tissue fill out the space or cavity, and he thinks there can hardly be any question as to the practicability of this framework.

Human Glanders.

DRS. A. D. BEVAN and WALTER HAMBURGER reported three cases of glanders occurring in the human subject.

DISCUSSION.

DR. MAXIMILIAN HERZOG mentioned two cases which he saw in Manila that were diagnosticated as smallpox. Commonly, the disease in the human being simulates either smallpox, pyemia, erysipelas or syphilis. The agglutination test is not reliable. The biologic test is reliable and simple, and can be made in a few days.

DR. F. ROBERT ZEIT reported two more cases of glanders occurring in Chicago, one of which he saw himself, and the other having occurred in the practice of Dr. Bayard Holmes.

DR. ADOLPH GEHRMANN mentioned a still earlier case of glanders in the human subject than the one related by Dr. Zeit. This was demonstrated before the society some fifteen years ago. This case also occurred in the practice of Dr. Holmes. He mentioned an interesting report from the Royal Victoria Hospital in Montreal of a case of glanders in a man who lived for about seven years, having exacerbations now and then, but who finally died of a generalized infection.

WESTERN SURGICAL AND GYNECOLOGICAL ASSOCIATION.

Seventeenth Annual Meeting, held at St. Louis, Dec. 30-31, 1907.

(*Concluded from page 309.*)

Harrington's Solution in Suppurative Inflammations of the Knee Joint.

DR. J. E. SUMMERS, Omaha, reported an interesting case in which this solution was used, and said that while his experience with Harrington's solution is not great, it can be used very advantageously in infective wounds where it is applicable. After thorough surgical cleansing of a wound or abscess cavity, the solution is allowed to remain in contact with all its surfaces for from three to five minutes; it is then irrigated or sponged away, and the particular wound dressed as required. Harrington's solution has, besides its established antiseptic property, the power, when applied to a raw surface, to produce a copious discharge of serum, thus aiding the washing away of noxious elements from the wound.

DR. CHARLES H. MAYO emphasized the value of Harrington's

solution as antiseptic, and said that it is one of the best and least destructive we have in use for suppurating wounds.

Early Restoration of Function After Excision of Elbow in Tuberculous Cases.

DR. G. G. COTTAM, Rock Rapids, Iowa, related the history of a young farmer who suffered from tuberculosis of the capitulum humeri, with ankylosis of the elbow, in which it was very desirable to secure early use of the arm. Excision by Kocher's incision was done, and through this means and by radical modification of the after-treatment from that usually employed, together with the fact that the operation was done before the soft parts were extensively involved, brought about the desired result, the patient being able to do heavy work after the eighth week.

Anesthesia Fatalities in Iowa.

DR. L. W. LITTIG, Iowa City, Iowa, sent a circular letter to 3,500 physicians practicing in Iowa. Eight hundred replies were received, many of them containing information which led to reports of fatalities by men who did not reply to his first letter. He rejected reported chloroform fatalities occurring from two to four days after anesthesia, because he does not think it is possible to secure anything like reliable data in this class of cases; rejected ether fatalities occurring at the close of long and difficult operations and excluded cases in which he thinks that the operation itself is of sufficient magnitude to cause death on the operating table or soon thereafter; obstetric fatalities in which placenta prævia or severe hemorrhage complicates delivery; excluded cases in which pneumonia or other lung complications follow gall bladder or other abdominal work.

The report contains 63 chloroform fatalities. Of these 63 fatalities, 10 occurred in dental practice. One fatality was due to choking during anesthesia. There were 5 fatalities in confinement in which chloroform was used, and in which the reporters blamed the chloroform. There was one confinement fatality in which ether was used, and in which the reporter blamed the ether. There was one late chloroform fatality, with jaundice.

The author concludes that: 1. Chloroform is vastly more dangerous than ether, especially in minor work, and at the beginning of administration. The chloroform-ether sequence is especially bad. 2. In the class of work mentioned, chloroform is so much more dangerous than ether that its use should be most emphatically condemned, and (quoting H. C. Wood, writing sixteen years ago or earlier) "the surgeon is not justified in using chloroform, except under certain circumstances and for very definite reasons." 3. Chloroform is especially dangerous in dental work and should not be used. 4. Chloroform is not free from danger in obstetric practice.

DISCUSSION.

DR. D. C. BROCKMAN, Ottumwa, Iowa, said the paper showed clearly that chloroform is a much more dangerous anesthetic than ether, and that there is very little advantage in using it, except in special cases. There are circumstances when chloroform should be used. Chloroform is particularly dangerous to give to hard drinkers, who are recovering from a debauch. Another anesthetic that is dangerous is the combination of morphin-hyoscin-cactin. Dr. Brockman said that many country doctors are carrying tablets of hyoscin-morphin-cactin for use when patients need morphin. Instead of using morphin and atropin, they use this compound, which is dangerous, and which should be used with the utmost care.

DR. HENRY T. BYFORD, Chicago, said that those who have seen fatalities from anesthetics will agree that the difference between ether and chloroform is that one kills quickly and the other does not. Ether is more liable to produce nausea during anesthesia and to cause aspiration pneumonia and bronchorrhea than chloroform.

DR. CHARLES S. JAMES, Centerville, Iowa, said there is an important factor in connection with anesthesia other than the variation between the results of ether and chloroform anesthesia, namely, the personal factor of the administrator. The difference in safety between chloroform anesthesia and ether anesthesia lies in the wider range of safety between the anesthetic dose and the lethal dose. In a considerable percentage of the deaths that occur from anesthetics, it will be found that the anesthetics have been given by inexperienced anesthetists. The personal equation in the administration of anesthetics should be considered.

DR. B. B. DAVIS, Omaha, said there is one element in connection with deaths from chloroform that has appealed to him, and that is that an anesthetic is administered to many patients for some trivial condition. A very large proportion of them have indulged in rather active exercise just before taking the anesthetic, and he is under the impression that many deaths can be avoided by letting patients rest a few minutes before the anesthetic is given. This is certainly one element of risk in administering chloroform, and usually chloroform is given in this particular class of cases rather than ether. A great many surgeons give chloroform to a patient for a short operation. Personally, he has used ether almost exclusively for years.

DR. CHARLES H. MAYO, Rochester, Minn., thinks that chloroform produces less sickness after its administration than ether, but he believes that a case of chloroform sickness, is equally as bad as ten ether cases. It lasts about three days, and it is almost impossible to stop it. Ether sickness can usually be stopped by washing out the stomach. He is convinced that too little attention is given to the education of medical students in regard to the use of anesthetics. Wherever possible, anesthetics should be given by skilled and experienced anesthetizers.

DR. W. W. GRANT, Denver, emphasized and endorsed the remarks of Dr. Mayo as to no teaching on the part of medical colleges with reference to anesthetics. No matter how long students have been in college, when they leave they are absolutely ignorant as to the method of giving anesthetics. Patients who have diseases of the bronchial tubes or air passages are not good subjects for ether. Arteriosclerotics and old alcoholics are not good patients to take ether, yet they are especially good subjects for chloroform. If he can select a skilled anesthetizer, he does not fear the administration of chloroform at an operation. He has always felt that there is more in the man who is giving the anesthetic than surgeons are prone to consider. If the anesthetizer knows how to give the anesthetic properly, then he knows how to discriminate and to give ether or chloroform, as the case demands.

DR. J. R. MINAHAN, Green Bay, Wis., believes that almost any patient can be killed with two drams of an anesthetic like chloroform or with an equally large amount of ether, and the person who gives the anesthetic should remember that it is not the quantity of the anesthetic that is fatal, but it is the rapidity with which the patient takes it that causes a fatal termination.

DR. JAMES E. MOORE, Minneapolis, said that 95 per cent. of his surgical patients during the past twenty years have had chloroform as the anesthetic, and not one has died from it. It must be remembered, however, he said, that the anesthetic was given by an expert anesthetist. If inexpert people give anesthetics, then ether is the safer, because it takes more of it, and it takes a longer time to kill a patient, but it will do it just the same. In England one rarely sees a patient take ether. The same may be said of Germany, simply because in those two countries they know how to give chloroform. In this country, where so much surgery is being done, we should insist on having skilled anesthetists.

DR. JABEZ N. JACKSON, Kansas City, Mo., said that up to four years ago he favored the administration of chloroform as an anesthetic, and used it almost exclusively, from the fact that up to that time he had never seen ether administered properly, in a way that would command his confidence. Since he saw ether administered in Deaver's clinic with the Esmarch inhaler by the open drop method, he has used ether practically exclusively, and he thinks that this anesthetic is used almost entirely by all the surgeons in Kansas City. Since using ether he has not seen a death from the anesthetic in three years, nor the slightest indication of trouble, either in his experience or in that of others.

DR. F. A. DUNSMOOR, Minneapolis, has a strong leaning toward chloroform, for the reason that it is more pleasant,

quicker in action, produces less vomiting, and can be carried easily. People are prone to be careful about it. He also confessed that he has taken chlorform himself, but said no colleague can give him chloroform again, no matter who he is. The majority of patients who are killed by chlorform are killed by small amounts, and usually they are patients who come for small operations, such as the removal of tonsils. The idiosyncrasies of patients should be considered in giving anesthetics. He would discourage the use of chloroform. If a patient undergoes a prolonged operation, ether should be given; if used in the smallest amounts, it is a safe anesthetic.

DR. M. L. HARRIS, Chicago, concurred in the conclusions reached by the essayist, but, he said, one can not take a patient to a hospital and always secure an expert anesthetist. The great preponderance of deaths is from chloroform, even in hospitals where professional anesthetists give the anesthetic. He has had three deaths from chloroform, and these deaths occurred before the patients were touched in a surgical way. The anesthetic was administered with the Esmarch apparatus. In two cases, it was the intention, as soon as the patient was asleep with chloroform, to change to ether. All three of the deaths occurred suddenly, long before he began to touch the patient, and in the hands of an expert anesthetizer. As to the Germans using chloroform and not having deaths from it, the collected investigations of the German Surgical Society undertaken a few years go, and continued, year after year, unmistakably show the great preponderance of deaths from the use of chloroform over ether. It was supposed, at one time, that ether irritated the kidneys and was dangerous in kidney complications, while chloroform was not. The fact is that where the urine has been examined after chloroform anesthesia, a larger percentage of the cases show albuminuria after its administration than after the administration of ether.

The Abdominal Incision.

DR. CLIFFORD U. COLLINS, Peoria, Ill., drew the following conclusions: 1. Abdominal incisions should be placed so that they will pass through both aponeurosis and muscle. 2. The incision in the aponeurosis and in the split in the muscle should run in different directions. This can be done in a large majority of abdominal operations. 3. A longitudinal incision should not be made through the linea alba or the sheaths of the rectus at a right angle to the combined pull of the three side muscles when it is possible to avoid it. 4. For very large tumors, in cases where the character and location of the pathology is in doubt, the longitudinal incision is probably necessary. 5. If the longitudinal incision is necessary, the split in the rectus should not be continuous with the aponeurotic incision, but should be placed to one side, and preferably through its inner half to avoid the intercostal nerves which enter the outer half. 6. It will take longer time and more experience to demonstrate the correctness of these conclusions.

Arthrodesis and Tendon Transference in Paralytic Club-Feet.

DR. JOHN PRENTISS LORD, Omaha, Neb., advised arthrodesis and tendon transference in cases of paralytic club-feet for the following reasons: 1. To prevent the return of the deformity, which so often occurs where braces alone are used. 2. To avoid loss of time during which the child becomes confirmed in the habit of deformity. 3. Because younger children learn to walk anew much easier than do those of more advanced years. 4. Where the patient is financially unable to meet the expense of prolonged treatment with braces. 5. By preventing return of deformity the parents do not fall into the habit of thinking nothing can be done. 6. It utilizes to best advantage the remaining muscular power, and gives the best possible results to be obtained in these cases.

The degree of work done depends on the amount of deformity. Ordinarily, removal of the articular surfaces from the tibio-astragaloid, astragalo-scaphoid and calcaneo-cuboid is done to effect arthrodesis. In addition, transference of the tibialis anticus to the common extensor for toe-drop is done, while in extreme equino-varus, astragalectomy, with removal of the joint surfaces from the calcaneo-cuboid articulation, and even suturing the tibialis anticus to the periosteum on the outer side of the cuboid, may be demanded. In some cases even the flexor longus hallucis is brought through the interosseous membrane and sutured to the common extensors. In the rare cases requiring muscle-splitting, he said one should avoid severing the transverse nerve fibers in the body of the muscle. Dr. Lord has used catgut sutures, except where the tension is heavy, when he uses fine silk, boiled in bichlorid, dried and reboiled in paraffin, before operation. In more than 40 consecutive cases the results have been very satisfactory. In joint cases, cigarette drainage was used to take away oozing. This was gradually removed, no suppuration taking place. Heavy casts were applied as long as six months, the use of the foot being gradually increased, after three or four months. The results have been very gratifying, the majority of patients having been able to discard braces or crutches within a reasonable time.

Practice of Surgery.

DR. CHARLES H. OVIATT, in his address, presented a few thoughts bearing on the practice of surgery that naturally come to one who has spent the most active years of his life in the work. No attempt was made to take up the history further than to show that previous to the year 1800 but few discoveries were made that marked any distinct advance. The evolution of surgery in the past century has kept pace with the development of science along other lines, wonderful as this has been. With the perfected technic of antisepsis and asepsis, it seems that the acme of surgical science has been reached; but in the light of discoveries it would be rash to attempt to place a limit to the future of surgery.

The ambitious medical student does not usually get far into his college work before he decides to become a surgeon. This decision is brought about largely through what he sees in surgical clinics and from his observation of the position held by the surgical leaders of the profession. Young men who elect to become surgeons should make sure that they possess the special aptitude, and then be willing to devote a long period to preparation for the work. Attention was called to the fact that there is much that passes under the name of surgery being done by incompetent and ill-trained men. Some of it is honest and well intended, but much is for purely commercial ends. A spirit of graft has pervaded the profession that is undermining morals and ethics. A partial explanation for the existence of this condition is found in the fact that this is an age of commercialism. We are known to the world as a nation of dollar-chasers. This, and the overcrowding of the profession with men from inferior schools, is, in large part, responsible for fee-splitting and the commission evil. The existence of this class of medical colleges is less excusable when it is considered that the better schools rank with the best in the world, and that they are ample to afford instruction for all who should enter the profession. Enough well-prepared men of character are entering the field to insure the upholding of the lofty ideals that have characterized the profession in the past. We may, therefore, take a hopeful view of the future. Another aid in the elimination of the graft evil is coming from the people themselves. The public mind is especially active at this time in combating graft in all forms.

The moral standards set for professional men and men in public life are going to be higher in the future, and with the lime light of public opinion turned on the medical and surgical grafter the evil will cease to exist. Hand in hand with this reform it is hoped that a standard of qualification will be established for those who assume to do surgery.

Significance of Abdominal Tenderness in Locating Lesions of Viscera.

DR. T. C. WITHERSPOON, Butte, Mont., referred to the physiology of the sensory nerves of the abdominal viscera, and discussed the effect of lesions of the viscera in the production of pain. The somatic areas of pain referred from the viscera and their significance in diagnosis were pointed out; likewise the character of visceral pain. He spoke of disturbance of the sensory function of the somatic nerves, with coincident disturbance of visceral function. Lastly, he called attention to those pains of central origin which are referred to the abdomen. Pott's disease, tabes and tumors in the spinal canal illustrate this class. Usually the subjective pain is not accompanied by tenderness, at least not of any acuteness.

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Etiology of Epithelioma.

DR. ARTHUR E. HERTZLER, Kansas City, Mo., began with the hypothesis that the limitation of epithelial cell development is set by the chemical difference in the basement membrane and epithelial cells. Experiments prove that those chemicals which unite with (stain) connective tissue *in vivo* cause an atypical epithelial cell proliferation resembling closely a beginning epithelioma. The development of atypical cells is limited because the action of the chemical on the connective tissue is limited. This results in constancy for stains having these characteristics. It is negative for connective tissue stains which do not stain *in vivo*, or for nuclear stains. In areas in which atypical cell proliferation has been brought about by such means, the fibers, after fixation, do not stain with the ordinary fibrous tissue stains, while the fibrous tissue in regions not so treated stains in the characteristic manner. Applying facts so deduced clinically, the general statement is ventured that epitheliomas occur in those regions where alkaline secretions are permitted to come in contact with the fibrous tissue by irritation, thus producing the resistance of the connective tissue to the invasion of epithelial cells or to some change primarily in the connective tissue, e. g., prolonged exposure to leucocytes, as in chronic inflammation, or to some overstimulation of the epithelial cells. Either of these conditions will lead to a disturbance of chemical balance and permit the invasion of the epithelium.

Preparatory and Postoperative Treatment.

DR. JAMES E. MOORE, Minneapolis, said that, as a rule, preparatory and postoperative treatment, aside from the sterilization of the operative field and the dressing of the wound, has more to do with the comfort of the patient than with his recovery, for emergency cases very commonly do well, and surgeons frequently perform successful operations away from home, and leave the after-treatment to a physician little skilled in the care of surgical cases. In all but exceptional cases, where some organ, the bladder, for example, has to be prepared for operative procedures, prolonged preparatory treatment is unnecessary and inadvisable. It is sufficient to have the average patient enter the hospital on the day preceding the operation. In weak patients, and where a very severe operation is to be performed, 1/30 grain of strychnia given just before operation is helpful. The operative field should be shaved, thoroughly disinfected, and a sterile dressing applied the evening before the operation. Every operating room should have an experienced anesthetist, because it adds to the patient's comfort and safety, and allows the surgeon to give his undivided attention to the operation. Most stitch abscesses are caused by tight sutures, and tight bandages are the cause of untold suffering. Thirst is the greatest source of suffering after operation, and in the management of this symptom many mistakes are made. His patients all get water after operation, and they convalesce much more comfortably than those who are deprived of it. All surgeons agree that the patient is better without food for a time after operation. To force feeding will surely disturb his stomach. Aside from opiates and mild cathartics, medicine has very little place in postoperative treatment, only to meet definite indications.

In every case the question naturally arises, When shall the patient get out of bed? All agree that old people should get up at the very earliest period possible, for reasons well understood, but there is still a great diversity of opinion as to when a younger patient should get up. Every abdominal operation is of sufficient importance to justify a patient remaining in bed for from one to three weeks.

Appendix in Sac of Femoral Hernia.

DR. CHARLES S. JAMES, Centerville, Iowa, reported the case of a female, aged 77 years, who for four days had noticed a painful lump in the right groin. She was in usual health previously, but had observed a small lump at this point for several years. Symptoms were negative, except that the pulse was 96, and temperature 102. There was a prominent brawny swelling, 3½ to 4 inches in diameter, indurated and semi-fluctuant, presenting the characteristic appearance of a suppurative gland over Poupart's ligament. There was no impulse. A diagnosis was made of a local suppurative process, with probable femoral hernia. Operation under spinal anesthesia. The abscess cavity was dissected up with difficulty and found to be the appendix. A separate abdominal incision disclosed an incarcerated loop of ileum, gangrenous, and two perforations. He resected five inches of the intestine, and resorted to end-to-end anastomosis with suture. The appendix was removed in the usual manner. The patient made an excellent recovery.

Diagnosis of Appendicitis with Pelvic Disease.

DR. A. E. BENJAMIN, Minneapolis, said that any inflammatory disease within the abdomen primarily involving one organ may from continuity or contiguity result in other tissues or organs being involved. The character of the disease, the variety of each form of disease, the number of organs involved, the associated displacement of organs, the temperament, environment, and avocation of the individual sufferer, are all factors to be considered in summing up the case. A careful personal history, a thorough physical examination of the individual, with the aid of chemical and bacteriologic investigation, and a searching examination with all the apparatus at command, i. e., cystoscope, proctoscope, microscope, and *x*-ray, will clear up the majority of cases. In certain cases, if no positive diagnosis can be made, there may be clear indications for operative interference to cure the disease. In complicated cases a thorough search through a proper sized opening should be made to terminate the symptoms complained of, and a record of all findings for future reference.

Torsion of Omentum.

DR. W. W. GRANT, Denver, reported an interesting case. He is positive, from the nature and character of the adhesion, the condition of the intestine and absence of any indication of disease, past or present, of every other organ or part, that it is of long standing. It seems possible, he said, that it can have dated from the existence of hernia in childhood without causing intestinal obstruction or torsion at an earlier date. The vomiting may have been due to a momentary obstruction from volvulus due to the adhesion and intestinal peristalsis.

In reviewing the literature Dr. Grant found 61 cases reported. He agreed with Richardson, of Los Angeles, that strangulation of the omentum from pressure or adhesions does not constitute torsion and should not be classed as such. Only 7 cases are entirely intra-abdominal. His own makes 8. The torsion may be single or double, but usually the former. In the intra-abdominal cases the symptoms closely resemble those of acute appendicitis, and up to the present time with a probable diagnosis of the latter. Even in hernia, the abdominal symptoms are pronounced in most cases. The tenderness and dulness at an early period cover a wider area than in appendicitis; yet, if on the right side, both subjective and objective symptoms simulate those of acute appendicitis. If hernia exists, one should especially be on guard as to the differential diagnosis. The history of torsion of the greater omentum justifies this precautionary statement, and he hopes that these suggestions may be accepted as timely. He believes this case is unique and exceptional in being completely amputated by torsion from the body of the omentum and in being fixed by adhesion to one point of intestine and to nothing else.

Lymphatic and Portal Infections Following Appendicitis.

DR. ROLAND HILL, St. Louis, reported a case illustrating these infections, and said that in the present stage of surgical knowledge we are almost absolutely helpless in the presence of some of the severe forms of infection when the infecting organism has once passed into the general circulation.

Etxrauterine and Intrauterine Pregnancy.

DR. D. C. BROCKMAN, Ottumwa, Iowa, reported the case of a woman five months pregnant, with extrauterine and intrauterine pregnancy. An attempt was made to remove the ectopic sac by abdominal section, but the parts were so vascular that he was obliged to desist. Furthermore, the patient was so debilitated from vomiting that he did nothing further. But in ten days he opened the sac from below, removed the fetus, and packed the cavity with gauze, intending to remove the placenta later. Uterine hemorrhage and pains occurred on the third day, and the woman died two days later from hemorrhage.

Sexual Perversion Accompanying Prostatic Hypertrophy.

DR. J. F. PERCY, Galesburg, Ill., believes that the old prostatic, who shows aberrant sexual activity, is in a large proportion of cases suffering from a psychosis rather than senile dementia, to which the symptoms are usually attributed. Under the influence of the irritation from his enlarged prostate, he may commit all forms of sexual crime, and after removal of his prostate his functional sexual aberration disappears and he remains cured. This phase of the diseased prostate opens up the possibility of a more rational study of the pelvic environment of the prostate gland in the sexual perverts among men, old and young. Many old prostatics are in insane asylums, many of them are in the government and state soldiers' homes, as well as in the various county almshouses. The strain of sexual excesses from early life until old age, the intimate connection maintained between the prostate gland and the sympathetic and the cerebrospinal nerves, the unknown secretory functions of the prostate gland along physiologic lines, these all make prominent the fact that with the hypertrophied prostate can be had a class of symptoms referable to the sexual system, where the mental life of the sufferer carries him close to the border where insanity has its dominion, and which can be corrected by the aid of surgery.

Other Papers Read.

The following papers were also read: "Hydrocephalus, Its Surgical Management," by Dr. William Jepson of Sioux City, Iowa; "Sarcoma of the Liver," by Dr. Van Buren Knott of Sioux City, Iowa; "The Diagnosis and Treatment of Extrauterine Pregnancy, with Report of a Case," by Dr. George C. Barton of Minneapolis; "Intestinal Obstruction," by Dr. B. M. Ricketts, Cincinnati.

Medicolegal

Physician Can Not be Examined by Referee as to Result of Examination.

The Supreme Court of New York, Special Term, New York County, says that an order made in the case of Wood vs. Hoffman for the examination of the plaintiff as an averse party under sections 870, 872 and 873 of the New York Code of Civil Procedure directed the plaintiff to appear for examination before a referee, directed a physical examination by a physician, and further directed the examination of the physician before the referee as to the result of his examination. In so far as the order directed or permitted the examination of the physician, it was clearly unwarranted. The court can find no provision of law which permitted it. The section of the Code of Civil Procedure (873) contemplates a physical examination of the party by the physician which includes such oral examination as the physician thinks proper, and of the questions and answers the referee can make a record; but the physician can not be examined himself as to the result until the trial.

Damages Recoverable for Injuries—"Physician" Defined.

The Supreme Court of Minnesota says that in the personal injury case of Goss vs. Goss and others the trial court instructed the jury to the effect that the plaintiff, if he had established his cause of action, was entitled to recover all the damages he had sustained which naturally and proximately resulted from his injury, but that he was not entitled to recover for any aggravation of his injuries caused by his neglect; that he was not entitled to recover for anything resulting from his own negligence which may have increased the effect of his injury; and, further, if he was guilty of negligence in the changing of physicians, or in changing his location from Cass Lake to Anoka, he could not recover anything for the increased suffering or damage or injury due to such negligence.

The defendants urged that this was error, because the instruction should have been limited to the employment of a surgeon, and not a physician; that the plaintiff was in the care of a competent surgeon, and voluntarily left him, and his condition at the time of the trial was due to his carelessness in leaving the surgeon and taking up an unskilled man; and, further, that the burden was on the plaintiff to show how much he contributed to his injuries by such carelessness. But the general rule given by the trial court was correct; for, where one person is injured by the wrong or negligence of another, and he himself is not negligent in the selection of a medical attendant, the wrongdoer is liable for all the proximate results of his own act, although the consequences of the injury would have been less serious than they proved to be if the attendant had exercised proper professional skill and care.

The trial judge correctly used the word "physician," instead of "surgeon." A physician is one who is versed in medical science, a branch of which is surgery; and a surgeon is a physician who treats bodily injuries and ills by manual operations and the use of surgical instruments and appliances. A physician, as defined by the Minnesota statute and in common parlance, is a person skilled in both medicine and surgery. Rev. Laws 1905, sections 2295-2300; 6 Words and Phrases, pp. 5374-5376.

Care Required of Persons with Defective Eyesight, Etc.

The Supreme Judicial Court of Massachusetts says, in the case of Keith vs. Worcester & Blackstone Valley Street Railway Company, that the standard of care established by the law is what the ordinarily prudent and cautious person in the full possession and exercise of his faculties would do to protect himself under given conditions. There is no higher or different standard for one who is aged, feeble, blind, halt, deaf or otherwise impaired in capacity, than for one young and in perfect mental and physicial condition. The standard is the same for all.

It has frequently, in recent as well as earlier cases, been said, in referring to one under some impediment, that greater caution or increased circumspection may be required in view of these adverse conditions. These expressions mean nothing more than that a person so afflicted must put forth a greater degree of effort than one not acting under any disabilities in order to attain that standard of care, which the law has established for everybody.

When looked at from one standpoint, it is incorrect to say that a blind person must exercise a higher degree of care than one whose sight is perfect, but in another aspect, a blind person may be obliged to take precautions, practice vigilance and sharpen other senses, unnecessary for one of clear vision, in order to attain that degree of care which the law requires. It may depend in some slight degree how the description of duty begins, where the emphasis may fall at a given moment, but when the whole proposition is stated, the rights of the parties are as fully protected in the one way as in the other. It is perhaps more logical to say that the plaintiff is bound to use ordinary care, and that in passing on what ordinary care demands, due consideration should be given in blindness or other infirmities.

But it is also correct to say that in the exercise of common prudence one of defective eyesight must usually as a matter of general knowledge take more care and employ keener watchfulness in walking on the streets and avoiding obstructions than the same person with good eyesight, in order to reach the standard of excellence established by the law for all persons alike, whether they be weak or strong, sound or deficient.

State Board May be Compelled After Deciding Against It to Issue License to Practice.

The Supreme Court of Missouri says that the only disputed question in the mandamus case of State, on the relation of McCleary vs. Adcock and others, constituting the State Board of Health of Missouri, to compel the issuance to the relator of a license to practice medicine, was as to whether the relator was a matriculant in the school claimed prior to March 12, 1901. If he was, he was entitled to his license. The act of 1903 stated that it should not apply to any student who had matriculated in a medical college on or prior to March 12, 1901, and that it should be the duty of the said board of health on receiving a fee of $15 from said student to issue to him a license to practice medicine when said student presented a diploma from any medical college of the state. Under the facts of this case, and under this law, the only thing for the board to do was to rightfully determine the question as to

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whether or not the relator was a matriculant in this school prior to March 12, 1901.

If the board can not act judicially, as held in the Goodier Case, this case resolved itself into the plain proposition—did or did not the conditions exist? If so, the license must go. The great weight of the evidence showed that the relator had matriculated prior to March 12, 1901, and, such being the case, the peremptory writ of mandamus must go.

The court concludes by saying that boards of this character, having merely administrative and ministerial duties to perform, can not act arbitrarily, nor against the great weight of the positive testimony on a given question, and, if they do so act, there is redress for the party aggrieved by an action of this kind.

Description of Injuries not Waiver of Privilege.

The Supreme Court of Washington says that at the trial of the personal injury case of Noelle vs. Hoquiam Lumber & Shingle Company the plaintiff testified as to the character of the injuries he received, but did not testify in regard to what the physician who cared for his wounds told him, or as to what the physician did for him. The physician who attended him from the outset, and who dressed the wounds at the hospital the first time, died shortly before the trial. Two other physicians, who were connected with the hospital, who were associated with that one, and who helped to dress the wounds, were present at the trial. They were called as witnesses by the defendant to testify to the extent of the plaintiff's injury, but on the plaintiff's objection their evidence was excluded under the statute relating to privileged communications. It was argued by the defendant that this ruling was error, for the reason that, the plaintiff himself having testified as to the character and extent of the injury, he thereby waived his privilege in regard thereto. But the court holds that there was no error in excluding the evidence of the attending physicians.

The Washington statute, the court says, provides: "The following persons shall not be examined as witnesses: 4. A regular physician or surgeon shall not, without the consent of his patient, be examined in a civil action as to any information acquired in attending such patient, which was necessary to enable him to prescribe or act for the patient. . . . " It is clear that, with the consent of the patient, his physician may be called and divulge all the information he has learned in his professional capacity; otherwise, not.

Many authorities were cited by the defendant to the effect that, where the patient himself calls the physician as a witness and permits him to testify concerning the ailment, treatment and the advice given, this constitutes a waiver of the privilege; and also, where the patient testifies to what happened in the presence of the physician, or the advice and treatment given, or statements made by the physician, the privilege is also waived. The cases so holding are based on the reason that the patient himself, by testifying in regard to facts which he might have kept secret, thereby breaks the seal of privilege and waives the right to object, because the statute does not intend that such privilege shall be used both as a sword of offense and at the same time as a shield of defense. But no case was called to the court's attention which holds that a person may not describe his injuries as he sees and feels them, without reference to what his attending physician or surgeon may have told him, and that an adverse party may then call a physician and prove by him that the patient is mistaken or has testified untruthfully.

It is perhaps true, as argued by the defendant, that the injured party and the attending physician may be the only persons who have knowledge of the extent of an injury, and that, if the physician may not testify thereto, great injustice may be done. This, of course, argues against the policy of the statute, which rests with the legislature, and not with the courts, and would annul the provisions of the statute entirely. The legislature made no exceptions to the rule of secrecy where it was necessary to contradict falsehood, but provided for an exception only in case of consent of the patient. No doubt sufficient reason appeared why this should be the only exception.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

Boston Medical and Surgical Journal.

January 16.

1 Vasomotor Relations. W. T. Porter, Boston.
2 *Clinical Importance of Uneven Distribution of Hydrochloric Acid in Gastric Contents. A. E. Taussig and W. H. Rush, St. Louis.
3 The Problem of Expert Testimony. F. W. Anthony, Haverhill, Mass.
4 Practical Applications of Opsonic Therapy (Concluded). T. C. Beebe, Jr., and L. S. Medalia, Boston.
5 The "Optometrist." Does He Preach and Practice Medicine? J. C. Bossidy, Boston.

2. **Hydrochloric Acid in the Gastric Contents.**—Taussig and Rush, as the result of their experiments, believe that in practice trustworthy results in examination of the gastric contents can be obtained only if the following precautions are observed: The stomach contents must be obtained separately in the erect and in the prone posture; the acidity of each portion must be determined, and diagnostic conclusions based on the degree of acidity can be drawn only if the two acidities correspond fairly well, or if the total quantity of gastric contents obtained is so great that the unknown acidity of the obtainable residue may be neglected.

Medical Record, New York.

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6 *Anorectal Fistula. C. B. Kelsey, New York.
7 *Schlösser's Alcohol Injections for Facial Neuralgia. Sixteen Months' Experience with Fifty-five Cases; Three Failures. O. Kiliani, New York.
8 *Instruction in Hydrotherapy. S. Baruch, New York.
9 *Treatment of Chorea Minor, with Special Reference to the Dangers of the Arsenic Therapy. H. Koplik, New York.
10 Medical and Scientific Work in New York State Charitable Institutions. A. MacFarlane, Albany, N. Y.
11 Prevention of Death During Anesthesia by Chloroform and Ether. R. Reyburn, Washington, D. C.
12 *Writers' Cramp; What It Is and How It Can Be Treated by the Family Physician. S. H. Monell, New York.

6. **Anorectal Fistula.**—Kelsey considers the old division of fistulas into complete, blind external and blind internal, both practical and useful, and deals with the treatment of superficial fistula, tuberculous fistula, incontinence, pelvic fistula and deep pelvic fistula. When a deep pelvic fistula five or six inches long has formed, with external and internal openings, and when to hope for cure would require the cutting of much tissue, with incontinence as an almost certain result, it is often better to abstain from operation lest matters be made worse instead of better. In case of operation provision should be made for severe hemorrhage. The elastic ligature is particularly fitted for this class of cases. As a rule, it is best thoroughly to open the cutaneous orifice so that free access to the whole tract can be secured. The sharp curette should be used thoroughly and followed by free application of saturated solution of silver nitrate to every part, the external opening being kept free for subsequent drainage.

7. **Facial Neuralgia.**—Kiliani analyzes his results in fifty-five cases of facial neuralgia treated by Schlösser's alcohol injection method. The only surgical accident was a typical paresis of the oculomotor nerve, which lasted about four weeks. Out of the fifty-five cases he had three failures and one patient has had a recurrence. The remainder are, so far as he knows, free from pain, and of this fact he is positively sure in the case of forty-seven.

8. **Hydrotherapy.**—Baruch urges greater attention on the part of the profession to the study of hydrotherapy, and congratulates Columbia University on having taken the initiative in regard to its teaching.

9. **Arsenic in Chorea Minor.**—Koplik points out that the indiscriminate prescribing of arsenic is even more harmful than the prescribing of quinin in every febrile case. The toxic effects of arsenic on the kidneys have escaped adequate notice. Arsenical neuritis, too, has to be considered. Koplik watches carefully the action of the kidneys, more especially in all cases in which arsenic is being used. It was noted that in cases treated with one drop daily of Fowler's solution and the dose increased one drop a day (not three times daily) until a point had been reached which was called tolerance (viz.,

until there was slight puffiness of the eyelids), a study of the urine revealed the appearance of albumin before this stage was reached. If the administration was continued, casts and in some cases blood cells would appear. At first, though this seemed exceptional, it was subsequently shown to be the rule. Another point established where these results followed on what appeared to be a very moderate administration of arsenic, was the fact that Fowler's solution tends to gather strength; consequently, in the administration of arsenic the study of the urine is the most delicate measure of warning, the appearance of a trace of albumin indicating the stoppage of the drug, no matter how small the dose or how excellent the general condition of the patient. Chorea minor, he asserts, must be recognized as a self-limited disease and everything avoided that can tend to exacerbate symptoms. Modified rest cure is advisable in the mildest cases, and it is unwise to give increasing doses of Fowler's solution. A sedative is more to the purpose, sulphomethylmethane (trional), five grains three times daily, being recommended. For moderately severe cases rest in bed without complete isolation is important, and no arsenic should be given if there is cardiac involvement. Sodium salicylate may be useful, but if badly borne no drug beyond a sedative should be given and no digitalis. Strychnin as a bitter tonic has proved useful. Hydrotherapy is of service. In the severest forms in which speech is lost, the use of arsenic is fraught with danger; the sides of the bed should be padded. In short, Koplik considers the use of arsenic in this disease futile and surrounded with danger. Isolation and darkened rooms Koplik disapproves of, as children do better for the agreeable quiet companionship of others. They need sunlight and air besides.

12. **Writer's Cramp.**—When a healthy person tires his arm by usual work for a brief time the muscles have the power to recover from the lameness and exhaustion by natural rest, especially with the aid of a little stimulus to the circulation. This must not be abused, however, or Nature will cease to eliminate the toxins of combustion resulting from work, so that a localized disease will result. The main indications are the elimination of these toxic products and the improvement of nutrition of the affected tissues. The first of these indications is admirably met by the modern electric light radiant heat cabinet bath or in its absence a course of Turkish baths may be substituted.

New York Medical Journal.

January 18.

13 *Modern Methods in Surgical Treatment of Gastric Diseases. F. Torek, New York.
14 *Varicose Veins; Their Treatment by Multiple Short Incisions. C. F. Kivlin, Troy, N. Y.
15 *Case of Sarcoma of the Kidney. L. F. La Pierre, Norwich, Conn.
16 *Clinical Significance of McBurney's Point. A. Sturmdorf, New York.
17 Prevention of Nervous and Mental Disorders Incident to School Life. J. H. Pleasants, Baltimore.
18 *Psychic Treatment of Nervous Diseases from a Practical Standpoint. C. A. Penrose, Baltimore.
19 Chorioepithelioma Malignum. A. M. Crispin, New York.
20 Rhythmical Alterations in the Width of the Palpebral Fissure of Both Eyes Probably Produced by Spasm of the Levator Palpebræ Muscles. C. A. Veasey, Philadelphia.

13. **Gastric Surgery.**—Torek's article is a detailed description, accompanied with illustrations, of the method of performing gastroenterostomy, anterior and posterior, gastroduodenostomy, pyloroplasty, etc.

14. **Varicose Veins.**—Kivlin makes several short incisions, starting about two and a half inches below the knee joint at a point directly over the internal saphenous vein, where two large laterals are usually to be found. The laterals are tied and liberated. This process is repeated at other points down the limb. The vein is tied proximally and distally at the uppermost incision and divided. It is then drawn down through opening after opening, tied and removed. Any large laterals can be dealt with in similar manner. It is claimed that the operation is quicker, less liable to infection, has practically no loss of blood, convalescence is short, and there is no scar tissue left at the knee.

15. **Sarcoma of Kidney.**—La Pierre reports a case of sarcoma of the kidney discovered at autopsy in a female child 14 months old, which, together with a review of the subject generally, leads him to conclude that sarcoma of the kidney may exist without symptoms, and that generalization may occur early, before the kidney is greatly enlarged. In La Pierre's case, appearance of the anemia and rapid loss of flesh was coincident with generalization of the growth, but a correct diagnosis could not have been made but for the autopsy.

16. **McBurney's Point.**—Sturmdorf challenges the correctness of the claim that the establishment of the maximum pain at McBurney's point is pathognomonic of appendicitis, and asserts that it is equally true that appendicitis may exist in its absence and that a typical McBurney point may be present when the appendix is not involved. In the light of MacKenzie and Head's amplification of Ross's researches, a McBurney point, in common with every other localized pain area, may represent either the direct pain focus of a disturbance within its own area, or the reflected pain focus of a distant lesion. The differentiation is to be made by first examining the skin area superficially by Head's method, and then following with McBurney's, for by using McBurney's method alone a locally intense pain will be found, whether the pain be of local origin or reflected. Sturmdorf further repeats McWilliams' assertion that there may be primary typhlitis independent of appendicitis, dysentery, actinomycosis, or cancer, and that it may be due to coprostasis or may be idiopathic. He bases his remarks on 208 cases observed in public and private practice during a period of three years.

18. **Psychic Treatment of Nervous Disorders.**—Penrose takes exception to the current idea that the mass of people who have become interested in psychotherapy have really been driven into it by the neglect of the profession at large. He considers that it is rather due to a certain degenerate type of mind fast spreading over the land. This consists in a certain mind weariness, a reaction against the strain and turmoil, the ambition and excessive restlessness of the present day. The Christian Science Church typifies a disinclination to think, so that some simple theory is evolved which shall explain everything to the invidual's satisfaction, letting him out of most of the worries of life, and it may thus help posterity, by the induction of a resting or spore stage for the race. He urges caution in turning a mind from the ideas which often it has evolved from its own outwornness, and which in the presence of a poor state of bodily nutrition may be its haven of rest. The body should be built up and the psychic change made later. Has any one, he asks, ever seen a perfectly organically healthy man or woman who could long remain unhappy? When a man is in the "pink of condition" he is also happy for the most part. Penrose regards it as very dangerous that even the purely functional neuroses should be turned over to untrained physicians for treatment, owing to the frequent impossibility of determining what is organic and what is functional, or how dependent the mental state is on an ill-nourished body.

Journal of Experimental Medicine, Lancaster, Pa.

January.

21 *Induced Susceptibility of the Guinea-pig to the Toxic Action of the Blood Serum of the Horse. P. A. Lewis, Boston.
22 *Inhibitory Influence of Eosin on Sporulation. H. Noguchi, New York.
23 *Transplantation of Human Carcinomatous Material into Lower Animals. G. McConnell, St. Louis.
24 *Rigor Mortis and the Influence of Calcium and Magnesium Salts on Its Development. S. J. Meltzer and J. Auer, New York.
25 *Fatal Anemia with Enormous Numbers of Circulating Phagocytes. M. W. Rowley, Boston.
26 *Transplantation in Mass of the Kidneys. A. Carrel, New York.
27 *Serum Treatment of Epidemic Cerebrospinal Meningitis. S. Flexner and J. W. Jobling, New York.
28 Stomach Feeding in Mice. L. H. Marks, Frankfort-on-Main.

21. **Guinea-Pigs and Horse Serum.**—Lewis concludes that the particular method of sensitization and the place where the test injection is made have an important bearing on the results obtained by various workers. Comparing the results obtained, he finds that the incubation period of the hypersensitive reaction is not sharply limited, but that there is a progressive increase in sensitiveness from the sixth day, and presumably before that, extending over a period of several

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weeks. It seems probable that the degree of hypersensitiveness attained when the sensitizing dose consists of a mixture of diphtheria toxin and serum is greater than when a single dose of the same small quantity of serum is given alone. The hypersensitive reaction is transmissible from mother to offspring. The transmission is probably not equally effective in all cases, and individual young guinea-pigs probably vary greatly in the rate with which they lose their ability to react. As a result, not all of the young of a hypersensitive mother react to a subcutaneous dose of 5 c.c. of serum given when they are four or five weeks old. The reaction in the young animals differs markedly from that in those actively sensitized. These differences are such as to indicate that in the mother there is a considerable localization of the reaction in tissues and organs whose destruction does not cause sudden death. The local reaction is a protective factor and is not transmitted to the same degree as the factors involved in the fatal reaction. The hypersensitive reaction to horse serum depends on the development of a special antibody during the incubation period, which antibody may be passively transferred to a fresh animal. If the dose of hypersensitive serum be sufficient, and the intoxicating injection be given directly into the circulation, this passive hypersensitiveness may be enough so that the animal will die when tested. The antibody on which the hypersensitive reaction depends may be entirely neutralized by horse serum without causing symptoms. The gradual introduction of increasing doses over a total period of twenty-four hours suffices for this. The animal is then, properly speaking, neither immune nor refractory, but is essentially in the condition of a normal animal which has recently had a large dose of horse serum.

22. **Eosin and Sporulation.**—Noguchi finds that eosin ("gelb") in concentration of less than 1 per cent. hinders many spore-forming bacteria from producing spores, the inhibitory action being more pronounced on the anaërobic than on the aërobic forms.

23. **Transplantation of Carcinoma.**—McConnell transplanted pieces of scirrhous carcinoma of the breast into the abdominal wall of an adult and of a young white rat. In the case of the young rat, there was a complete absorption of the implanted tissue within ten days. In the older rat the implanted nodule was not absorbed for five months, neither was there any increase in its size, and it was walled off and underwent degeneration. McConnell believes that this course of events indicates the probability that a lesser degree of resistance of the rat or a higher degree of the virulence of the tumor might have resulted in growth in the rat of the implanted bit of human carcinoma.

24. **Rigor Mortis.**—Calcium salts hasten and magnesium salts retard the development of rigor mortis when these salts are administered subcutaneously or intravenously. When injected intra-arterially, concentrated solutions of both kinds of salts cause nearly an immediate onset of a strong stiffness of the muscles which is apparently a contraction brought on by a stimulation by these salts and due to osmosis. If M/8 solutions—nearly equimolecular to "physiologic" solutions of sodium chlorid—are used, even when injected intra-arterially, calcium salts hasten and magnesium salts retard the onset of rigor. The hastening and retardation in this case as well as in the case of subcutaneous and intravenous injections, are ion effects, and essentially due to the cations, calcium and magnesium. There seems to be no difference in the degree of stiffness in the final rigor, only the onset and development of the rigor are hastened in the case of the one salt and retarded in the other.

25. **Fatal Anemia.**—Rowley discusses with great detail the occurrence of extensive phagocytosis of red blood corpuscles and leucocytes by leucocytes in the peripheral blood in a case of anemia in a young man 27 years old who had aortic and mitral disease. Every type of leucocyte was engaged in phagocytosis of fellow cells. On the warm stage the phagocytes were readily seen to send out processes that would reach around the corpuscles which evidently were incorporated into the body of the phagocyte. There was also as stated phagocytosis of leucocytes. The destruction of the cells taken up could be followed and seemed to result on the one hand from processes of solution, due probably to some enzyme, and on the other hand to be due to a large extent to mechanical breaking up of the captured cells. The phagocytosis observed in this case is attributed to the presence in the blood of autohemopsonins.

26. **Transplantation of Kidneys.**—Carrel asserts that his experiments demonstrate that an animal—dog—which has undergone a double nephrectomy and the grafting of both kidneys from another animal can secrete almost normal urine with his new organs and live in good health at least for a few weeks.

27. **Epidemic Cerebrospinal Meningitis.**—This subject was discussed editorially in THE JOURNAL, Jan. 18, 1908, page 207.

Medical Fortnightly, St. Louis.

January 10.

29 Touring the Deccan. R. G. Eccles, Brooklyn, N. Y.
30 The Distal Mesenteric Artery. (To be continued.) B. Robinson, Chicago.
31 Cotarnin Phthalate as a Uterine Hemostatic. O. Hessel, New York.
32 Acute Pancreatitis. W. H. Cook, St. Louis.
33 Case of Pregnancy Complicated by Pyonephritis Due to Pressure in Ureter. F. F. Esselbruegge, St. Louis.

Surgery, Gynecology and Obstetrics, Chicago.

December.

34 Medieval Military Surgery. N. Senn, Chicago.
35 *Surgical Treatment of Exophthalmic Goiter. A. P. Heineck, Chicago.
36 *Hyperemia in Treatment of Tuberculosis of the Peritoneum. A. E. Hertzler, Kansas City, Mo.
37 Stovain Spinal Anesthesia, with Over 5,500 Cases from the Literature. G. Torrance, Birmingham, Ala.
38 Chelioplasty for Ectropion of Lower Lid. T. F. Riggs, Baltimore.
39 Bone Regeneration and Certain Features of Osteomyelitis. A. R. Colvin, St. Paul.
40 *Hour of Birth. A Discussion as to the Hour at Which Birth Most Often Occurs. F. W. Lynch, Chicago.
41 Roentgen Method in Surgery of the Chest. C. Beck, New York.
42 Case of Ovarian Cyst with Twisted Pedicle Complicating Pregnancy and Labor. E. P. Davis, Philadelphia.
43 Excision of Rectum for Cicatricial Stricture by the Combined Method with Preservation of Sphincter. J. J. Buchanan, Pittsburg, Pa.

35. **Exophthalmic Goiter.**—Heineck describes a primary form of exophthalmic goiter in which there is a concurrent development of the goiter and of some of the other symptoms characteristic of this affection, and a secondary form in which the symptom-complex is grafted on a pre-existing enlargement of the thyroid.

36. **Tuberculous Peritonitis.**—Hertzler concludes that the result of opening the abdomen is a hyperemia of the peritoneum and subperitoneal tissues, due to the lessening of pressure from without; and since hyperemia has been found of use in tuberculosis elsewhere we may by analogy, he states, assume this as the active factor in the treatment of tuberculous peritonitis by laparotomy. If this theory is correct, then a repetition of the treatment should be beneficial. This can be effected by leaving a silver tube with a flange within the abdominal cavity, so that air may be admitted into it with an attending hyperemia at intervals—just as in animal experimentations. Repeated engorgements can thus be obtained as in the case of joints. He expresses a principle rather than lays down a method of treatment.

40. **The Hour of Birth.**—Lynch analyzes the hour of birth in 1,508 full-term spontaneous labors at Johns Hopkins, and concludes that the theory that most births occur during the night is erroneous, and that births are distributed fairly evenly throughout the twenty-four hours, though the variations between 7 p. m. and 7 a. m. showed 4 per cent. more births than in the other twelve hours, in which the variation was less than 0.5 per cent.

Cleveland Medical Journal.

December.

44 *Review of 100 Cases of Rachitis. J. J. Thomas and A. F. Furrer, Cleveland.
45 Unusually Large Dermoid Cyst of Ovary. W. H. Humiston, Cleveland.
46 Our Relations to the Insane. H. H. Drysdale, Cleveland.
47 Pathologic Findings in a Case of Pemphigus Foliaceus. O. T. Schultz, Cleveland.
48 Nasal and Pharyngeal Obstructions in Infants and Children. M. Metzenbaum, Cleveland.

January.

49 The Campaign for Medical Legislation; Its Probabilities for Success. R. B. Newcomb, Cleveland.
50 Cleveland's Present Ambulance Service. M. Metzenbaum, Cleveland.
51 *Achondroplasia. S. L. Bernstein, Cleveland.
52 *Case of Veronal Dermatitis. H. B. Ormsby, Cleveland.
53 Case of Paralysis of the Accommodation. C. C. Stuart, Cleveland.

44. **Rachitis.**—Thomas and Furrer summarize their article as follows: Forty per cent. of the infants and children of the hospital class between the ages of 6 months and 2 years are rachitic. The rosary, enlarged epiphyses of the wrists, prominent parietal and frontal eminences and delayed dentition are the four most constant symptoms. About 80 per cent. of the cases may be termed slight or moderately advanced, and are therefore more likely to be overlooked. Rachitis, uncomplicated, is a self-limited disease tending toward gradual recovery; untreated, however, serious deformities of the bones may occur; the most commonly affected being the sternum, ribs, spine, long bones of the extremities and pelvis. Bronchitis, bronchopneumonia, pertussis and gastrointestinal disturbances, which are so common during the first two years and are not ordinarily considered serious in the normally developed healthy child, when engrafted on a constitution already weakened by the malnutrition of rachitis, become important factors in the causation of the high mortality in infants and young children. The diagnosis of rachitis may be made by inspection and palpation. The treatment is practically wholly along dietetic and hygienic lines. It means simply (a) the withdrawal of proprietary and other irrational foods and the substituting of a clean milk, properly modified and divided into doses suitable to the age and weight of the child; (b) plenty of fresh air and sunshine, with bodily cleanliness; (c) the administration of cod-liver oil or other fats, and phosphorus.

51. **Achondroplasia.**—Bernstein reports a case of achondroplasia, studies the literature of the subject and concludes that achondroplasia is a distinct disease, differing from rachitis, having characteristics of its own and for which neither medical nor physical treatment is of avail.

52. **Veronal Dermatitis.**—Ormsby refers to the various drugs apt to cause eruptions, and mentions the characters and therapeutics of veronal. After summarizing the literature of veronal poisoning, he reports a case of a woman with varicosis and general neurasthenia in which, in addition to the ordinary local measures, he prescribed 5-grain doses of veronal to be taken at 4 and 8 p. m. About the fifth day after beginning the drug, there appeared high fever, coated tongue, headache, and general malaise, with itching, especially between the fingers and toes and on the dorsum of the hands and feet. Symptomatic treatment was adopted and the veronal discontinued. For three days more the symptoms grew worse, delirium and general restlessness setting in, the hands, forearms, legs and face becoming red and swollen. In spite of lead lotion and internally of alkalies with an opiate for relief, the dermatitis extended, involving the entire body. The face swelled enormously, the eyes closed, the extremities became edematous, stiff and painful, resembling generalized erysipelas. The fever, which had ranged from 104 to 106 F., then fell, and the symptoms subsided, disappearing with desquamation about six days later. Later the nails became black and brittle, but were subsequently replaced. Ormsby attributes this case to idiosyncrasy.

Kentucky Medical Journal, Bowling Green.

December.

54 *What the American Medical Association Stands For. G. H. Simmons, Chicago.
55 *Surgery of Gallstone Disease. W. A. Quinn, Henderson.
56 *Pure Food and Drug Legislation; How We Do It in Tennessee. A. B. Cooke, Nashville.
57 *Plans and Possibilities of the Course of Postgraduate Study of the American Medical Association. J. H. Blackburn, Bowling Green.
58 *Relations that Should Exist Between Pharmacists and Physicians. P. C. Sutphin, Canmer.
59 *Glaucoma. W. N. Offutt, Lexington.
60 Treatment of Pneumonia. W. H. Ketchum, Hopkinsville.
61 Local Anesthetics and Analgesics in Throat, Nose and Ear. S. G. Dabney, Louisville.

54.—This article was published in THE JOURNAL, Nov. 23, 1907, page 1733.

55.—Abstracted in THE JOURNAL, Nov. 2, 1907, page 1549.

56 and 57.—Abstracted in THE JOURNAL, Nov. 9, 1907, page 1625.

58. **Relations That Should Exist Between Pharmacists and Physicians.**—Sutphin discusses proprietary remedies and pharmaceutical preparations generally, and urges that physicians and pharmacists should strive to stand in closer relation to each other.

59. **Glaucoma.**—Offutt discusses briefly and clearly the symptomatology and differential diagnosis of glaucoma, for it is only by early diagnosis by the general practitioner that a good result can be attained. He considers also the pathology, and with respect to treatment states that the best results of iridectomy are obtained in the acute and subacute cases; that after iridectomy the pain and other symptoms are speedily relieved; that iridectomy is contraindicated in hemorrhage-glaucoma; that sclerotomy has proved less successful than iridectomy; and that paracentesis of the vitreous in chronic and secondary forms has often given good results.

American Journal of Surgery, New York.

December.

62 Some Cases of Acute and Chronic Infection Treated by Wright's Vaccine Method. J. C. Ohlmacher, Independence, Iowa.
63 *Benign Tumors of the Breast. R. Hill, St. Louis, Mo.
64 Blood Examination in Surgical Diagnosis. A Practical Study of Its Scope and Technic. (To be continued.) I. S. Wile, New York.
65 Value of Leucocyte Count in Diagnosis of Acute Inflammatory Disease. F. E. Sondern, New York.
66 New Management of Apparently Uncontrollable Hemorrhage from Kidney During Nephrotomy. G. I. Miller, Brooklyn, N. Y.
67 Spina Bifida. G. B. Morey, Manchester, N. H.
68 Surgery of the Nasopharyngeal Structures. M. Iverson, Stoughton, Wis.

63. **Benign Breast Tumors.**—Hill urges the removal of every adventitious growth in the mammary gland, with very few exceptions, and protests against the plan of watching a breast tumor to see how it develops. If operation is done at once the tumor can be removed with absolute safety, whereas by the time the "watching" process has accomplished its purpose the mischief is likely to be well on the road to the point where it is past repair.

St. Louis Medical Review.

December.

69 *Failure of Law and Lawyers to Cope with Modern Medicolegal Exigencies and Its Remedy. J. Punton, Kansas City.
70 Phototherapy. Electric Light and Color Effects. J. Wainwright, New York.
71 Leprosy in Mexico. G. W. Ruddell, St. Louis.
72 Surgery of the Ureter. B. M. Ricketts, Cincinnati.

69. **Medicolegal Exigencies.**—Punton discusses the legal aspect of medical expert evidence, the medical aspect of expert testimony, the trial of insane criminals, the evils of technicalities, and turns the tables on the lawyer who takes delight in twitting the doctor on the ancientness of the science of medicine and its lack of scientific exactness, etc., by citing the opinion of an eminent legal authority for the statement that there has been no progress made in law for over 5,000 years. He suggests the necessity of a legal and medical conference between the members of the American Bar Association and the American Medical Association as the remedy for present medicolegal failures.

Journal of Medical Society of New Jersey, Orange.

December.

73 Toxins and Antitoxins. B. A. Waddington, Salem.
74 *How Far May the General Practitioner Employ and Benefit from Laboratory Methods of Diagnosis? R. N. Willson, Philadelphia.
75 *Pneumonia; Its Etiology, Pathology, Symptoms and Treatment. E. W. Sprague, Newark.
76 Hyoscin-Morphin-Cactin Anesthesia. W. J. Chandler, South Orange.
77 Evolutions of Associations, with Especial Reference to the State Sanitary Association. G. K. Dickinson, Jersey City.

74. Abstracted in THE JOURNAL, July 20, 1907, page 269.

75. **Pneumonia.**—Sprague says that while specific treatment is the ideal, we are not yet able to abort or to cure true pneumococcic infection manifested in its pulmonary form. The bulk of treatment to-day remains symptomatic. In fever, he advises light covering, milk, hydrotherapeutic measures, rest in bed and cool air; in dyspnea, cool fresh air, oxygen, improve-

ment of the underlying heart conditions; for cough, heroin or creosote derivatives; for pain local counter irritations, application of heat or cold, occasionally morphin, are recommended. In disturbed circulation, he recommends digitalis given with caution in weak systole, dilatation and low tension of the pulse. He considers that its value has been long underestimated. Strychnin is to be deprecated in routine use, as acting in the same direction on the nervous system as the pneumococcic toxin. Alcohol should be given to habitual drinkers, but avoided as a routine measure. Caffein is useful in circulatory depression. Nitroglycerin and vasodilators should be restricted to cases of right heart embarrassment when the vasomotor tension is good. The effect of adrenalin is fleeting. Venesection is indicated only in cardiac failure with venous stasis.

Chicago Medical Recorder.

December.

78 Physiologic Methods in Diagnosis of Gastric Diseases. F. B. Turck, Chicago.
79 Diagnosis of Gonorrhea Affecting the Female Generative Tract. C. Culbertson, Chicago.
80 Diagnosis of Some Obscure Kidney Lesions. L. W. Bremerman, Chicago.

Long Island Medical Journal, Brooklyn, N. Y.

November.

81 Infantile Scorbutus. J. L. Morse, Boston.
82 Pathology, Etiology and Management of Obstructive Hypertrophy and Atrophy of the Prostate. P. M. Pilcher, Brooklyn, N. Y.
83 Why Is a Particular Child Right-handed or Left-handed? G. M. Gould, Philadelphia.
84 Case of Choked Disc Probably Due to Brain Tumor. J. B. Thomas, Brooklyn, N. Y.
85 Direct Transfusion of Blood by Crile Method. R. W. Westbrook, Brooklyn, N. Y.
86 Health of Public School Children. L. H. Gulick, New York.
87 Case of Cesarean Section. C. Jewett, Brooklyn, N. Y.

December.

88 *Etiology of Acute Anterior Poliomyelitis. B. Fedde, Brooklyn, N. Y.
89 *Clinical Study of the Etiology of Acute Anterior Poliomyelitis. H. Climenko, New York.
90 Previous History and Environment in Anterior Poliomyelitis. J. R. Terriberry, New York.
91 *Symptoms in the Acute Stage of Anterior Poliomyelitis. L. C. Ager, Brooklyn, N. Y.
92 *Sensory Elements in Anterior Poliomyelitis. W. Browning, Brooklyn, N. Y.
93 Chronic Stage of Anterior Poliomyelitis. A. C. Brush, Brooklyn, N. Y.
94 *Treatment of Acute Stage of Anterior Poliomyelitis. L. P. Clark, New York.
95 Orthopedic After-Treatment of Anterior Poliomyelitis. J. M. Clayland, Brooklyn, N. Y.
96 Neurologic After-Treatment of Anterior Poliomyelitis. F. Tilney, Brooklyn, N. Y.

88. **Anterior Poliomyelitis.**—Fedde considers it probable that acute anterior poliomyelitis is a general infection, a bacteriemia with infective embolism or thrombosis causing inflammation of the arteries and surrounding tissues in the cord.

89. **Id.**—Climenko reviews the history of recorded epidemics and, from an analysis of 187 cases under his own observation, concludes that the condition is due to a toxemia, and that since 43 per cent. of the cases showed gastrointestinal disturbances, as well as on general principles, the gastrointestinal canal is the probable port of entry.

91. **Id.**—Ager says that there is every reason to believe that the earliest manifestation of infection in acute anterior poliomyelitis is always to be found in the gastroenteric tract, with an accompaniment of fever. The statement, so common in the text-books, that pain is absent, is incorrect, for in this epidemic pain and tenderness were prominent symptoms in all cases. Besides the ordinary mild type, he mentions two other types: One mild, in which the paralysis is found only in some unusual muscle group, e. g., the deep muscles of the back; and another severe, in which the infection is so high in the cord that the case resembles acute meningitis with opisthotonos, convulsions, irregular and sluggish pupils, severe headache, head rolling, sharp cry and periods of coma.

92. **Id.**—Browning discusses the sensory symptoms under three heads: Gross sensory disturbances, paresthesias and pain. The early pain is a hyperalgesia of peripheral distribution, sensitive soles, etc. There is also a purely spinal pain, seemingly dependent on the extent to which the spinal meninges are implicated, which is greatly increased by movements of the spinal column. Another form is a distinct tenderness all along the spinal column, favorably influenced by local counter-irritation. Then there is the soreness and tenderness that comes on after the acute stage has passed, and is wholly peripheral in site, having its seat principally in the affected muscles. This is of service prognostically as indicating the extent of muscular involvement.

94. **Id.**—Clark discusses the treatment. At the outset, he advises free purgation with calomel or castor oil, complete rest on the side with a plank back rest or in the prone position. Poultices or fomentations and cupping wet or dry or leeches, are theoretically justified. Toxin elimination should be hastened by hot baths and packs, enteroclysis, and ingestion of large quantities of hot water. The effect of drugs is doubtful, but belladonna and ergot may be given in full doses with a view to limiting the palsy at least without actual harm. All precautions should be continued for some days beyond the acute febrile stage. No electrical tests should be made until all nerve tenderness has disappeared.

Military Surgeon, Carlisle, Pa.

December.

97 Sanitation of the Modern Camp; Principles and Practices. C. E. Woodruff, U. S. Army.
98 The Hospital Ship—The Only Adequate Solution of Properly Caring for the Sick and Wounded in a Fleet. J. C. Wise, U. S. Navy.
99 *Amebic Dysentery—Chronic—a Surgical Disease. J. M. Holt, U. S. P. H. & Marine-Hospital Service.
100 Tropical Diseases as They Exist in the Philippines. P. M. Ashburton and C. F. Craig, U. S. Army.
101 Organization and Instruction of the Medical Department of the State Forces. C. T. Dulin, Utah National Guard.
102 Work of the Medical Corps in the Care of the Wounded at Gettysburg. E. L. Bebee, National Guard of New York.

99. **Chronic Amebic Dysentery.**—Holt advocates surgical treatment for all cases of amebic dysentery in which amebas persist in the stools after one year's patient trial of irrigation through the rectum, and when the amebic ulceration is higher up the intestine than the sigmoid flexure.

Yale Medical Journal, New Haven.

December.

103 *Points of Contact Between Otology and General Medicine, with Illustrative Cases. F. B. Sprague, Providence, R. I.
104 Cross Eyes in Children. E. M. McCabe, New Haven.
105 Fractures at the Wrist. E. H. Arnold, New Haven.

103. **Otology in General Medicine.**—Sprague discusses the various conditions that may be associated with diseases of the middle ear, and reports cases illustrating the insidious progress of the necrotic process in the mastoid in very young infants. The cases illustrate: An obscure feverish illness ultimately traced to acute adenoiditis; the confusion between otitis and meningitis, and otitis, malaria and typhoid; ear trouble mistaken for bronchitis, pneumonia, typhoid and malaria; the existence of a necrotic process in the mastoid and brain tissue without alarming symptoms; double earache due to brain tumor; the confusion of uremia with otitis; and ear symptoms resulting from an excessive use of stimulants.

Ophthalmic Record, Chicago.

December.

106 A Further Study of the So-called Horopter, Making Ocular Rotation Easy of Understanding. G. C. Savage, Nashville, Tenn.
107 *Some Experiences with Simple Glaucoma and Conclusions Therefrom on the Relative Value of Operative and Non-operative Treatment. H. P. Young, Burlington, Iowa.
108 Blindness Following Injection of Protargol in Lachrymal Sac. F. P. Lewis, Buffalo, N. Y.

107. **Glaucoma.**—Young asks: How shall we distinguish inflammatory from non-inflammatory glaucoma? And: What is the measure of relief obtainable in this disease by either mode of treatment? He considers that Schweigger's distinction is logical in every way, namely, that a dilated sluggish pupil and shallow anterior chamber precludes the diagnosis of simple glaucoma and means inflammatory glaucoma, even though dormant. With regard to treatment of non-inflammatory glaucoma, it would seem that with either operative or non-operative measures the prospects are more for palliation than for cure either way. It becomes a question as between the risks of sudden total loss, postoperative cataract or "dazzlings," and chances remote for permanent relief and, average,

for a longer lease of vision. The balance may be in favor of the operative method, but is not great enough to warrant criticism of the use of the other method. It is overwhelmingly in favor of the operative method in cases showing either dilated sluggish pupils with shallow anterior chamber, steamy cornea, pain or rapid loss of vision, no matter how free from inflammation, but under Schweigger's standard such cases could not be mistaken for non-inflammatory or simple glaucoma.

Therapeutic Gazette, Detroit.

December.

109 *Medical Treatment of Diseases of the Gall Bladder. J. H. Musser, Philadelphia.
110 Practical Points in Diagnosis and Treatment of Diseases of the Skin. L. D. Bulkley, New York.
111 Therapeutics of Mineral Waters of French Lick Type in Gastrointestinal Diseases. G. D. Kahlo. Indianapolis.
112 Administration of Ether. H. S. Wieder, Philadelphia.
113 *Thyroid Extract in Migraine and Epilepsy Apropos of Ten Cases. A. Gordon, Philadelphia.
114 Ocular Reaction of Tuberculosis. W. H. Hutchings, Detroit.

109.—Abstracted in THE JOURNAL, July 29, 1907, page 269.

113. **Migraine and Epilepsy.**—Gordon reports ten cases to illustrate the principle that migraine due to morbid metabolism has an undoubted relationship to a faulty thyroid function. Migrainic patients with migraine are usually free from the affliction during pregnancy, during which period there is functional hyperactivity of the thyroid. Of course, not all cases are directly ascribable to this source, but the therapeutic test by thyroid feeding is at the same time diagnostic as regards pathogenesis. That there is a relation of the seizures of essential epilepsy to a faulty chemistry of the organism is now generally admitted. The six patients who were studied with special care for a long time all showed signs of hypothyroidization. When the thyroid treatment was instituted a remarkable change took place, first, in the general condition, then the epileptic seizures became rare. There is a certain class of epileptics whose seizures are in direct relationship with a disturbed function of the ductless glands, particularly the thyroids. In such cases the failure of the usual treatment lies in the want of thyroid feeding.

Journal of Inebriety, Boston.

December.

115 Inebriety; Its Causation and Control. R. W. Brantwaite.
116 Use of Opium in Preference to Its Derivatives. W. C. Abbott, Chicago.
117 Delirium Tremens. A. L. Benedict, Buffalo, N. Y.
118 Malt Liquors in Inflammatory Diseases of the Skin. C. A. Kinch, New York.
119 Nutritive Value of Alcohol. M. Kassawitz.
120 Neuritis and Its Treatment by Electricity. F. D. Granger, Boston.
121 Alcohol and Children. W. L. Stowell, New York City.
122 *Alcohol as a Therapeutic Agent in Diseases of the Stomach. J. H. Salisbury, Chicago.
123 Inebriety as a Physical Disease. H. W. Mann, Larkfield, Nairn, N. B.
124 Psychic Effects of Inebriety. J. M. Taylor, Philadelphia.

122. **Alcohol in Stomach Diseases.**—Salisbury concludes that no harm can come from the exclusion of alcohol from the diet of normal people or those with disease of the stomach. The probable innocuous amount does not exceed 15 grams a day, say 5 oz., of 10 per cent. wine or a pint of 3 per cent. beer. This probably has no special injurious action on the stomach, though injurious effects may possibly follow continuous use. Alcohol increases acidity but not pepsin of gastric juice, and favors gastric motility and absorption of food. In moderate quantities it does not retard digestion. It injures the stomach in large quantities. Constituents other than ethyl alcohol, e. g., fusel oil, tannin, gas and yeast, may render alcoholic drinks objectionable in stomach disease. Alcohol is contraindicated in gastric ulcer, hyperacidity and catarrh. In neurotics it is apt to induce habit. Under due restrictions alcoholic beverages may be used to stimulate appetite, a quality dependent largely on accessory flavoring materials. The use of alcohol to relieve gastric distress is rational and effective, but it should be employed as a temporary resource only. The alcoholic content of proprietary remedies for dyspepsia is very objectionable. The use of alcohol to counteract irregular blood distribution in vasomotor disturbances is rational, but requires further investigation.

New York State Journal of Medicine, New York.

December.

125 Edema and Ascites as Symptoms of Myxedema. C. Stover, Amsterdam, N. Y.
126 Treatment of Ventral Hernia. T. B. Spence, Brooklyn, N. Y.
127 Should the General Practitioner Study Refraction? G. M. Gould, Philadelphia.
128 Ametropia; Its Immediate and Remote Consequences. H. E. Smith, Norwich, N. Y.
129 Commitment of the Insane, Past and Present, in the State of New York. I. G. Harris, Poughkeepsie, N. Y.
130 Race Suicide. C. E. Low, Pulaski, N. Y.
131 Present Status of the Roentgen Rays. A. Holding, Albany.
132 Novocain in Local Anesthesia. W. S. Schley, New York.
133 Whooping Cough. R. J. Smith, Schenectady, N. Y.
134 Diet in Typhoid. H. Greeley, Brooklyn, N. Y.

University of Pennsylvania Medical Bulletin, Philadelphia.

December.

135 Address at Opening of the Medical Department of the University of Pennsylvania. A. J. Smith, Philadelphia.
136 Injury to the Conus Terminalis (Cauda Equina). M. H. Fussell, Philadelphia.
137 Tendon Transplantation. J. H. Jopson, Philadelphia.
138 Arteriosclerosis of Central Nervous System, with Report of Three Cases. H. S. Hutchinson, Philadelphia.
139 Experimental Inoculations of Monkeys with Glands from Cases of Hodgkin's Disease. W. T. Longcope, Philadelphia.
140 Deformities and Injuries to the Face and Jaws of the Fetus in Utero or Incident to Labor. R. H. Ivy, Philadelphia.

Bulletin of the Johns Hopkins Hospital, Baltimore.

December.

141 Comparative Surgery. J. T. Geraghty, J. W. Churchman, S. J. Crowe, F. F. Gundrum, C. W. Mills, R. D. McClure, H. F. Derge, C. H. Bryant, H. M. Evans and A. G. Brenizer, Baltimore.
142 The Physician in the Paintings of Jan Steen. J. W. Churchman, Baltimore.
143 Camp Life; Its Sphere of Usefulness and Its Beneficial Effects on Growing Boys. E. C. Hill.

New Orleans Medical and Surgical Journal.

December.

144 Minor Studies in Psychology, with Special Reference to Masturbation. A. J. Himel, Napoleonville, La.
145 Case of Foreign Body Imbedded in Retina. O. Dowling, Shreveport, La.
146 A New Method of Enucleation of Eyeball Under Local Anesthesia. E. A. Robin, New Orleans.
147 Preliminary Report on the Pathologic Relation Between the Frontal Sinus and Affections of the Eye. H. Dupuy, New Orleans.
148 Anatomic Observations and Anomalies. H. Bayon, New Orleans.
149 Health Conditions at La Ceiba, Honduras. C. M. Brady, New Orleans.
150 Psychic Treatment in Certain Nervous Disorders. E. M. Hummel, Jackson, La.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

Lancet, London.

January 4.

1 *Human Anatomy in England During the Nineteenth Century. A. Keith.
2 Study of Embryology. P. Thompson.
3 Modern Treatment of Cleft Palate. W. A. Lane.
4 Preliminary Note on the Kinematograph in Medicine. H. C. Thomson.
5 Diabetes Mellitus in Two Brothers, with Necropsies. W. C. Bosanquet.
6 *Diphtheria of the Skin of Three Years' Duration, Treated by Antitoxin. A. B. Slater.
7 An Unusual Pathologic Condition of Meckel's Diverticulum. C. H. Turner.
8 Delirium Tremens: Statistical Study of 156 Cases. L. N. Boston.

1. **Teaching of Anatomy.**—Keith reviews the history of anatomy in England, points out that the teaching of it has followed the French school in confining itself almost entirely to descriptive anatomy, and states that the purely descriptive method has obscured its real object, viz., a comprehension of not the dead, but the living human body. The study of function should go hand in hand with that of structure, of which it is the complement. A reconsideration of the present scope of anatomy is urgent. The growth of physiology, the need of more time for the study of the practical essentials of the art of medicine, the newer subjects, necessitate the unloading of something from the curriculum, and Keith would unload much of the minuteness of descriptive detail, substituting something of the practical spirit of the eighteenth century anatomists,

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studying the human body like Harvey, Hunter, Monro and the two Bells, to understand the significance, not merely the form of the various parts.

6. **Diphtheria of the Skin.**—Slater reports a case of a girl, 13 years of age, who three years ago was treated for inflammation of the eyes at an eye hospital. A week or two later two white patches were found, one on the inside of each labium, and also a thin discharge. Blisters began to develop around the vulva and spread on to the abdomen, becoming general. The child was taken to a general hospital and remained there five months, making little progress, except that the vesicles became confined to the parts around the vulva, the chest, the neck and the head, including all the face. Since then she has been treated with mercury and iodids for two years, on the assumption that the disease was syphilitic. On June 20, 1907, the child was first seen by Slater, who describes the extent of the vesicles and states that all the areas were discharging freely, a thin clear fluid dripping from the chin at the rate of a drop a minute. The general condition of the child was good, she felt quite well in herself, was well nourished and ate well. There was no sign of any constitutional disturbance, the spleen was not enlarged, the heart was normal, and the urine free from albumin. A bacteriologic examination of the serous fluid from the vesicles was made, the smears being stained with methylene blue and Gram. Organisms resembling the diphtheria bacillus were found. Agar and blood serum tubes were inoculated, a growth appearing 18 hours later. On plating, *Staphylococcus aureus* and *Staphylococcus albus* were isolated, together with a bacillus forming small cream colonies on agar. Smears from these colonies gave in pure culture a bacillus closely resembling the bacillus of diphtheria. The organism was obtained in pure culture on blood serum. Experiments on guinea-pigs were made, one pig receiving 2 c.c. of the suspension, the other the same amount plus 1.5 c.c. of diphtheria antitoxin. The latter pig developed no symptoms. The first died in ten days, and cultivations from the heart and peritoneal fluid showed the Klebs-Loeffler bacillus in pure culture. On July 2 treatment with diphtheria antitoxin was commenced, some constitutional disturbance being produced, which rapidly subsided, and on July 4 the injection was repeated. Injections were made at intervals up to July 19. Remarkable improvement ensued and inoculations from the discharge ceased to produce any growth. The author considers the important factor in this case to be the Klebs-Loeffler bacillus. The disease apparently commenced with an acute attack of diphtheria, the primary seat of infection being the eyes. From this focus the vulva became infected, and then the bacteria in some way found their way into the superficial lymphatic circulation, producing a condition resembling herpes, probably as the result of peripheral neuritis set up by the bacilli themselves. The absence of any scarring proves the lesion to have been confined to the superficial layer of the skin. The various lotions, even mercury perchlorid, 1 to 1,500, had no effect on the lesion, whereas the effect of the antitoxin was remarkable.

British Medical Journal, London.

January 4.

9 **Modifications in the Movements of the Knee Joint Directly Consequent on Injury.** W. Bennett.
10 Operative Demonstration of the Occasional Diagnostic Accuracy of Roentgen Ray in Urinary Stone. E. H. Fenwick.
11 *Cancer of the Ovary. J. Bland-Sutton.
12 Recent Experiences in Surgery of the Liver and Gall Bladder. J. L. Thomas.
13 Recent Developments in Knowledge of Syphilis in Relation to Diseases of the Nervous System. F. W. Mott.
14 Excessive Patellar Reflex of Functional Nervous Origin and Especially the "Trepidation" or Spinal Epilepsy Form. E. P. Weber.
15 *Typhoid Carriers. A. Ledingham and J. C. G. Ledingham.
16 Contents of Irreducible Inguinal Hernia in Female Subjects and True Hermaphroditism. E. M. Corner.
17 Nephropexy. F. Eve.

11. **Cancer of Ovary.**—Bland-Sutton refers to some cases published by him in the *British Medical Journal*, May 26, 1906, thought to be primary carcinoma of the ovary, but in which subsequent examination proved the existence of a primary focus in the colon or the breast. He maintains the view that primary cancer of the ovary is a rare condition and one concerning which very little is known. Histologic laboratory reports will not enlighten us on this point. It is necessary to combine such reports with clinical observations and with a statement from the surgeon that in the course of the operation he made a careful examination of the gastrointestinal tract and gall bladder for a primary carcinoma. The remarkable feature of these secondary masses in the ovaries is the enormous dimensions to which they may attain. It is easy to overlook a small primary cancer in the colon when masked by a large solid ovarian tumor. He reports in detail a case illustrating this point. We are apt to forget that the lethal effects of a carcinoma are due not so much to the primary tumor as to the accidents arising from it. Cancer will attack an organ and cause no symptoms until it interferes with the function. There must be something favorable in the ovary to the engrafting of cancer cells to enable them to form such large tumors. The slow and insidious manner in which carcinoma grows in the colon and gall bladder tends to make diagnosis difficult and uncertain. Physicians must begin anew their studies of ovarian carcinoma.

15. **Typhoid Carriers.**—A. and J. C. G. Ledingham have made an investigation into the subject of typhoid carriers, arising out of a succession of small outbreaks of typhoid in a Scottish lunatic asylum. Certain features suggested that the source of these outbreaks was to be found among the patients themselves, and as a result of a series of bacteriologic investigations three typhoid carriers out of a total of 90 females examined have been found and isolated under supervision with proper disinfection of excreta and other prophylactic measures. The authors consider it probable that in these cases the bacilli vegetate in the gall bladder from which they are intermittently ejected into the intestine. They further suggest that, in addition to the isolation and supervision of all proved typhoid carriers the excreta of recovered typhoid patients should be examined at brief intervals for a period of at least six months.

Practitioner, London.

December.

18 **Appendix Abscess.** W. H. Battle.
19 **Movable Kidney.** (Concluded.) C. M. H. Howell and H. W. Wilson.
20 The Formation of a "Fundal" or Suspensory Ligament After Hysteropexy and Its Dangers. F. E. Taylor.
21 Malignant Disease of the Testicle. R. Howard.
22 *Suppuration in the Region of the Pharynx. D. C. L. Fitzwilliams.
23 Ascites Associated with Hepatic Cirrhosis: Report of a Case Successfully Treated by Omentopexy. A. D. Ketchen and A. E. Thomson.
24 *Analysis of 832 Cases of Scarlet Fever, with Observations on Diagnosis and Treatment of the Disease. W. N. Barlow.
25 The Necessity of Caution in Diagnosing Hysteria. B. Myers.

22. **Suppuration Near the Pharynx.**—Fitzwilliams groups suppuration about the pharynx as follows: (1) Quinsy or suppuration in and around the tonsil; (2) retropharyngeal abscess starting in the retropharyngeal space; (3) postadenoid suppuration; (4) suppuration or caseation in the deep cervical glands in relation to the carotid sheath; (5) cold abscess due to spinal caries. After suppuration about the tonsils, retropharyngeal abscess and suppuration of the cervical glands are the most frequent. He discusses the symptomatology and diagnosis of the clinical groups, making the following recommendations regarding their treatment: Quinsy—To open abscess through the mouth the child should be laid on the back, with the head dependent over the end of the table, the shoulders elevated on a sand bag and the head well extended so that the pus may run toward the nasopharnyx rather than toward the glottis. A peritonsillar abscess should be opened with the sinus forceps from a quarter to a third of an inch outside the anterior pillar of the fauces and on a level with the upper border of the tonsil. Retropharyngeal and postadenoid abscesses are also best opened by pushing the point of the sinus forceps into the abscess, opening the blades and withdrawing them. Tapping with a trocar and cannula or aspirating and enlarging the opening in a downward direction may be done. It is better to open through the mouth than by external incision, for the risk of infection by the mouth may be disregarded in practice and there are many objections to the external incision. Glandular abscesses should always be incised from the outside. Hilton's method should be employed. If a sharp spoon is used the proximity of the pharynx

must be remembered. In spinal caries also it is essential that a tuberculous abscess should be opened from the outside and under the strictest aseptic precautions. It should be treated on the same lines as a psoas abscess. A small transverse skin incision is made at the posterior border of the sternomastoid muscle, the fascia is divided vertically and a pair of sinus forceps is then pushed inward, just in front of the transverse processes of the vertebræ, till the abscess cavity is reached. A sharp spoon or flushing gouge is inserted and the tuberculous lining is gently removed. An area of bare bone can usually be found, and if this is felt to be carious it should be scraped (removing loose sequestra) with the finger in the pharnyx to avoid injury. If a flushing gouge has not been used, a saline flush should be given and the cavity wiped dry. In closing the cavity the divided deep fascia is united with catgut sutures, over which the skin is stitched with silkworm gut. The wound is then sealed with collodion and dressed. The general treatment of spinal caries consists in rest to the spine, extension and counter extension in bed, later some supporting apparatus. A careful watch should be maintained for reaccumulation of fluid.

24. **Scarlet Fever.**—Barlow, from an analysis of 832 cases, concludes that the presence or absence of complications does not depend entirely on the severity of the scarlet fever attack, but depends in an equal degree on the patient's condition when attacked and in a less degree on the age, complications being more likely the younger the child. A fever hospital is not the place for very mild cases if there is the slightest chance for isolating the patients at home for a few days. In his opinion, the very mild cases are infectious only for a few days. The diagnosis of scarlet fever is by no means always simple. Too much attention is often fixed on the rash, which may last only a few hours and may mislead by its atypical characters. Mild cases require no treatment beyond abundance of fresh air and a mild disinfecting throat spray. For otorrhea he recommends irrigation with boric acid solution and filling the ear with the acid. When the flow of urine is well established he prescribes iron. The duration of the infective period varies from a few days to some months. The nose and the nasopharynx he considers the sites where the infection lingers. Children with adenoids and large tonsils are apt to remain infectious for some time.

British Journal of Children's Diseases, London.

December.

26 *Report of an Epidemic of Glandular Fever. J. R. Clemens.
27 *Right-angled Contraction of the Tendon Achillis as a Cause of Halting and Stumbling in Children. A. H. Tubby.
28 Case of Congenital Dilatation of the Colon. H. Skelding.
29 Case of Rheumatic Hyperpyrexia in Child of Six. G. H. Lock.

26. **Glandular Fever.**—Clemens makes a report on sixteen cases of glandular fever occurring in a male orphan asylum where all the subjects were continually under observation, attention being specially directed to blood studies (opsonic index, blood charts and blood cultures), the incubation period and the eye-ground findings. The boys infected all slept in the same dormitory, the other boys escaping. A definite period of incubation of from 7 to 10 days was observed. The series of cases ended abruptly on fumigation by the city authorities. Mumps, influenza, scarlet fever and local foci of symptomatic adenitis were carefully excluded. The opsonic index for *Staphylococcus albus* was always positive and high. Blood counts showed slight leucocytosis; blood cultures were negative. The pus in one case with suppurating gland was purely streptococcal, but non-pathogenic to the rabbit. Hyperemia of discs was observed in seven cases and optic neuritis in three cases; the veins were usually engorged. Glands not affected in any case were suboccipital, mastoid, parotid, inguinal. Glands affected were axillary, mediastinal, submaxillary, superficial and deep cervical. There was no enlargement of liver or spleen. Onset: In the majority of cases the boys woke in the morning with stiff neck, general myalgia and pain on deglutition. The nasopharynx was the most probable atrium of infection, as shown by the cervical glands being the first affected. In sporadic cases diagnosis would depend on sudden appearance of an acute cervical adenitis, the peculiar contour of the neck and the exclusion of other sources of gland involvement. The eye-ground findings would make the diagnosis certain, also the association of acute enlargement of the cervical glands with acute nephritis. The outlook for recovery is good. The mediastinal glands seem to be affected only in severe cases.

27. **Contraction of Tendo Achillis.**—Tubby enumerates five conditions of gait in children, due, he says, to varying degrees of loss of the angle of dorsiflexion, due to some degree of contraction of the calf muscles and the tendo Achillis. The usual condition found is that with the knee fully extended the foot can not be dorsiflexed beyond a right angle. Sometimes the condition is not so marked as this, there being 5 or even 10 degrees of dorsiflexion, but the fact remains that free movement at the ankle in the direction of flexion is limited and invariably produces unpleasant results. The conditions are as follows: 1. The child is soon tired in walking, has pains in his calves and knees. He can not run well or swiftly and soon stumbles. 2. There is shambling gait, the child walking with short steps and knees bent. 3. There is frequent occurrence of sprained ankle. 4. There is so-called flatfoot; the feet are held everted, yet the arches have not fallen, or may even be exaggerated. 5. The child walks with the toes turned in and on the outer side of the foot. Tubby describes the mechanism of these defects and their dependence on the lack of dorsiflexion. The method of examination is as follows: With the child seated and the knee fully extended, the foot is brought into a straight line with the leg. The foot is then slowly dorsiflexed, and the moment resistance is encountered or pain elicited passive movement should be stopped and the angle taken by the goniometer. The cause of this right-angled contraction of the tendo Achillis is in most cases infantile paralysis, affecting mainly the anterior muscles of the leg, though by the ordinary tests they may appear to have practically recovered. The symptoms often begin after an exanthem and neuritis of the external popliteal nerve is more often associated with the symptoms than is suspected. They are also associated with throat lesions—doubtful tonsillitis and diphtheria. If the fully extended limb is incapable of dorsiflexion, the remedy is lengthening of the tendo Achillis. Tubby practices an open operation by the Z method. The ordinary dorsiflexion of hill climbers is 10 or 15 degrees greater than that of town dwellers.

Journal of Laryngology, Rhinology and Otology, London.

December.

30 *Tracheobronchoscopy. C. Jackson.
31 Thirty-six Successive Cases of Optic Neuritis. Nasal Accessory Sinus Disease Present Twenty six Times. H. M. Fish.
32 Treatment of Foreign Bodies in the Respiratory Tract and Esophagus. G. Killian.

30. A similar article on this subject appeared in the *Laryngoscope*, St. Louis, October, 1907.

Bristol Medico-Chirurgical Journal.

December.

33 Syphilis. H. Waldo.
34 Spinal Anesthesia. E. W. H. Groves.
35 *Value of Compression of Aorta in Treatment of Postpartum Hemorrhage. F. P. Elliott.
36 Case of Generalized Sarcoma with Blood Changes. F. G. Bushnell.
37 Proportional Representation and the Comparison of Radiographs. W. Cotton.
38 Public Health in Bristol, 1906-1907. D. S. Davies.

35. **Postpartum Hemorrhage.**—Elliott, as the result of further experience since the publication of his original paper in the same journal, June, 1907, is convinced that manual compression of the aorta is a measure of primary importance in the treatment of postpartum hemorrhage, both that between the second and third stages of labor and the secondary form.

Journal of Tropical Medicine and Hygiene, London.

December 2.

39 Treatment of Epidemic Cholera in Eastern Bengal and Assam. J. Robertson.
40 *Case of Blackwater Fever Treated by Saline Enemata. T. F. G. Mayer.

40. **Normal Saline Enemata in Blackwater Fever.**—Mayer reports a case of blackwater fever treated with enemata of normal saline solution, one pint every four hours by day. One dram of a watery solution of quinin (quinin, gr. x, to water,

5i) was added to the enema at night to combat a constant rise of evening temperature. There was remarkably little distress throughout the treatment, the quantity of urine passed rose, the temperature fell. In ten days the patient was sent home convalescent. There was no vomiting during the attack.

Medical Press and Circular, London.

January 1.

41 Diet of the Aged. H. Campbell.
42 Inherited Syphilis. R. C. Lucas.
43 Eyestrain. T. P. C. Kirkpatrick.

Clinical Journal, London.

December 25.

44 Clinical Evidence Requisite Before and After Performance of Surgical Operations. C. B. Lockwood.
45 Dysentery. F. M. Sandwith.
46 Clinical Afternoon at Poplar Hospital for Accidents. Openshaw, Poland, Rigby and T. Thompson.

Bulletin de l'Académie de Médecine, Paris.

December 24, LXXI, No. 44, pp. 571-601.

47 *Mortality from Syphilis. C. Fernet.
48 *Treatment of Tuberculosis of the Hip Joint in Its Incipiency. (Coxotuberculose dans la phase de début.) Lannelongue.

47. Mortality from Syphilis.—Fernet states that in the general hospital where his data were collected 2.25 per cent. of the deaths were due to syphilis; in the insane asylums Joffroy reports 40 per cent. in 63 deaths, and Séglas, 46.61 per cent. of 182 deaths for which syphilis was alone responsible. Inherited syphilis was responsible for about one-twentieth of the total number of abortions known, for about one-fifth of the deaths among infants less than two weeks old, and for considerably more than a tenth of the deaths among children under 2 years old. This makes for Paris alone a mortality of about 4,000 deaths annually from inherited syphilis, or from 75 to 80 deaths a week.

48. Treatment of Incipient Tuberculous Hip Joint Disease.—Lannelongue urges early recognition and treatment before the development of an abscess with its irremediable consequences. The most instructive characteristic of the early stage is the intermittency of the phenomena, especially of the contracture and limping. Fully 80 or 90 per cent. of the patients can be cured, he asserts, under persevering treatment, for which he recommends "intra-extra-articular successive injections" of a mixture of 90 parts olive oil, 40 parts ether, 10 parts iodoform and 2 parts creosote. The hip joint is held in forced flexion and adduction, and the needle is introduced from above downward on the head of the femur, and from the rear forward. The injections must be supplemented by horizontal repose with continuous extension for the limb. Immobilizing casts are superfluous, he says, and do harm. The ether spreads the drugs over the entire inner surface of the joint, etc., and extension, by separating the parts of the joint, favors their healing. The iodoform attenuates the virulence of the bacilli and the effects of their products, while the creosote adds its sclerosing action.

Presse Médicale, Paris.

December 28, XV, No. 105, pp. 845-852.

49 Technic of the Kraske Operation for Cancers of the Rectum. R. Proust.
50 Spontaneous Rupture of the Aorta. M. Letulle.
51 Technic and Value of Microbiologic Examination in Syphilis. A. Sézary.
52 Technic for Estimating Amount of Shortening of the Hip. (Mensuration du raccourcissement de la cuisse.) H. Forestier.

Archiv für Gynäkologie, Berlin.

LXXXIV, No. 1, pp. 1-288. Last indexed, January 25, p. 320.

53 *Operative Extraction of Living Children in Advanced Extrauterine Pregnancy During the Last Twenty Years. (Durch Kaiserlotomie bei lebendem Kinde operirten Fälle von vorgeschrittener Extrauterinschwangerschaft.) A. Sittner.
54 *Remote Results of 54 Symphysiotomies. (Nachuntersuchungen der and der Leipziger Universitäts-Frauenklinik ausgeführten Symphysiotomien.) J. Thies.
55 Slanting Pelvis After Amputation of Thigh. (Entstehung des schiefen Beckens nach Oberschenkelamputation.) H. Füth.
56 Connective Tissue Fibers in the Fallopian Tubes. (Bindegewebe der weiblichen Geschlechtsorgane.) K. Hörmann.
57 Evidence of Existence of Somatic Periods in the Female Organism and Their Dependence on Cosmic Periods. (Vorhandensein somatischer Perioden im weiblichen Organismus.) Riebold.
58 Tearing of the Umbilical Cord During Delivery. (Zerreissung der Nabelschnur intra partum.) O. H. Forssell.
59 Hematoma of the Ovary. E. H. Wolf.
60 Wedge-shaped Resection of the Body of the Uterus in Chronic Metritis, Especially with Operations for Prolapse. (Keilresection des Corpus uterl.) F. Cohn.
61 Puerperal Dissecting Metritis. (Gangraena uteri puerperalis.) E. Gräfenberg.

53. Living Children in Advanced Extrauterine Pregnancy.—Sittner's article is a continuation of his previous compilations of the cases in the literature of living children delivered by abdominal section in ectopic pregnancy. Only five operators have had occasion to deliver as many as three of these "ectopers," and only one, Olshausen, was able to deliver thus three at full term. In his previous compilations, including the years 1813 to 1902, Sittner found records of 136 cases and is now able to bring the list up to date with 179. He gives the details of the last series of 43 cases, classifying them and emphasizing the various points useful for differentiation and for management of such cases. He adds an alphabetical list of the operators in the 147 cases between 1887 and 1907. Three Americans are mentioned in his latest series of 43 cases. Ten of the infants in this series died within the first month; the fate of 4 is unknown; 3 lived to be nearly 2 years old, and 12 are still living, one 7 years old at present. More than half of all the infants survived the first month, and many are known to have grown up. He argues that the mother does not seem to suffer from postponement of the operation for relief of ectopic pregnancy until the child is viable, that is, the conditions at the operation are not worse at term than in an early stage of the pregnancy, and the waiting does not offer frequent and sudden dangers. The fetus was imperfectly developed in about half the cases, but had developed sufficiently to be viable. The fetus was deformed in 17 of 122 cases, and in 5 of these the deformity was evidently responsible for the infant's death. In the 7 cases of deformity in the latest series of 43 cases with 29 viable children, 3 left the hospital alive. The deformities were impression of the skull, facial paralysis, contracture in the elbow, luxation of the hip joint, or torticollis. Study of this material and of hundreds of other cases in which the ectopic fetus died before operation, shows that the sac ruptured in 7.4 per cent. The rupture of the sac and separation of the placenta occurred during the later months of the pregnancy in some cases, but neither so frequently nor with such serious consequences—at least when the patient was under clinical supervision—as to justify disregard of the life of the fetus from fear of these complications. General or local disturbances of a milder nature are extremely frequent with ectopic pregnancy, recurring hemorrhage, pains from dragging of adhesions, displacement of the viscera and peritoneal inflammation. In case they exhaust the woman, the fetus should be disregarded. In 6 cases the ectopic pregnancy progressed without any disturbances, and in the majority the disturbances were so mild or bearable that the operation could be postponed out of regard for the child. In 28 out of the last series of 43 cases the women came to the operating table in a satisfactory condition. Some of the women refused to believe that their pregnancy was ectopic. The general conclusions of the article are in favor of trying to save two lives instead of one, especially as the sudden catastrophes become comparatively rare after the fifth month and as any aggravation of the condition can be promptly remedied by immediate intervention if the woman is kept under observation. In a case in Sittner's experience the empty uterus was crowded down into the pouch of Douglas. The patient was a woman of 34, pregnant for the second time after fourteen years. Abdominal section at the fortieth week delivered a healthy child weighing 3,250 gm., 46 cm. tall, now nearly 3 years old and thriving.

54. Symphysiotomies at Zweifel's Clinic at Leipsic.—Thies reports 54 cases in which symphysiotomy was done and relates the results of recent re-examination of the patients. Before the symphysiotomy only 13 per cent. of the children had been spontaneously delivered, while after the operation 63 per cent. were born spontaneously, even when the following children were larger than the first. He cites this as an important argument in favor of symphysiotomy against pubiotomy, as the latter generally requires a repetition at succeeding births. Roentgen examination shows that no injury has been done to the symphysis, but that it has been enlarged even in cases in which the wound healed by primary intention.

Archiv für Kinderheilkunde, Stuttgart.

XLVII, Nos. 1-3, pp. 1-240. Last indexed, September 28, p. 1151.

62 *Infant Mortality, "Infant Consultations" and Milk Stations. (Kindersterblichkeit und Milchküche.) E. Deutsch.
63 Experimental Study of Pathogenesis of Salivation in Digestive Affections. (Salivation bei Verdauungskrankheiten.) H. Roeder.
64 Breast Feeding. (Zur Frage der natürlichen Ernährung.) R. Biermer.
65 An Endemic of Malaria in Northwestern Germany Principally Confined to Children. G. Freudenthal.
66 Primary Diphtheria of the Nose, with Membrane Formation, in Infant Under a Month Old. (Rhinitis fibrinosa sive pseudomembranacea diphtherica.) P. Kuhn.
67 *Care of Infants in Public Institutions. (Versorgung der Säuglinge in öffentlicher Fürsorge.) A. Szana.
68 Acute Hemorrhagic Nephritis After Epidemic Parotitis in a Seven Months' Infant. Jelski.
69 *Vaccination and Vaccinal Allergy. C. von Pirquet's Allergy Test and Cutaneous Reaction. P. Kuhn.

62. **Infantile Mortality, "Infant Consultations" and Milk Stations.**—This article by Deutsch is a review of infant mortality in the various countries of the world tabulated under different headings. Among the facts apparently brought out by these tables is the greater mortality of male children and of children in large families, especially those born at short intervals. He also reviews what has been done in various countries in the way of giving advice and care to mothers of young infants and keeping an oversight of each infant's health, and gives numerous illustrations of the French "infant consultations," the "drop of milk," the milk stations for infants, and similar institutions in England, America and all the European countries, Algiers and Madagascar. Special buildings have been erected in a number of places, each bearing a large inscription that they are for the protection of infants.

67. **Care of Infants in Public Institutions.**—Szana describes the conditions at Temesvar, Hungary, where he has charge of the Children's Asylum and Children's Polyclinic. Nearly 81 per cent. of these children are illegitimate. Experience has shown that the mortality is much less when the infants can be nursed or brought up by their own mothers. It is the practice to give the infants out to nurse, and the stay in the public institution is made as short as possible. The physicians who attend these infant wards of the state are entitled to higher pay than for older children, as constant supervision is required.

69. **The Allergie Test.**—This article presents von Pirquet's views and experiences in detail as published in his book.

Archiv für klinische Chirurgie, Berlin.

LXXXIV, No. 4, pp. 917-1141. Last indexed, January 4, p. 79.

70 Report on Healed Firearm Wounds Among the Russian Troops in Manchuria. (Wirkung der japanischen Kriegswaffen im mandschurischen Feldzuge.) F. Schaefer, E. Svenson and E. von der Osten-Sacken.
71 Topography of the Growth of Tubercle Bacteria in the Kidney in Tuberculous Nephritis. G. Ekehorn.
72 *Experimental Study of Pathology and Surgery of Heart. (Pathologie und Chirurgie des Herzens.) R. Haecker.
73 Etiology of Madelung's Deformity of the Hand. P. Ewald.
74 *Ruptures of the Pancreas. H. Heineke.
75 Suprahyoid Pharyngotomy for Access to Tumors of Base of Tongue. (Geschwülste der Zungenbasis.) S. P. Fedoroff.

72. **Pathology and Surgery of the Heart.**—Haecker's experiments on dogs showed that it is possible to operate on the almost empty heart by compressing the afferent vessels, and that extensive incisions could be made in the different cavities of the heart without permanent injury to the organ. This fact, he thinks, opens fine prospects for surgical intervention on the heart, especially for foreign bodies. His work was done mostly in the Sauerbruch air cabinet, which allowed the chest to be opened up without fear of pneumothorax, the lung continuing its functions undisturbed, while reducing the tendency to hemorrhage when the incision was made and the danger of infection of the pleural cavity. In suturing the organ it should be held in such a way in the hand that the fingers can compress the afferent veins. By displacing the heart forward the vessels are kinked and this arrests the blood supply. He recommends a button suture with medium-sized catgut or silk, taking in only the myocardium and epicardium. The ends of the thread in the first suture are left long and help to hold the organ. The superior and inferior venæ cavæ could be clamped for ten minutes, in the experiments on dogs, without serious results for the animal. By clamping these veins and the left coronary vein, brief operations could be done with the heart empty without serious consequences. This allows the different cavities of the heart to be opened up and thoroughly searched for a foreign body, and even large parts resected. No air embolism was noted, probably from the underpressure prevailing in the cabinet. Small foreign bodies were constantly swept along with the blood current, but needles lodged in the cavities of the heart. His experience seems to indicate that there is a certain point in the walls of the heart near the mitral orifice, injury of which is followed by immediate arrest of the heart action.

74. **Ruptures of the Pancreas.**—Heineke reports four cases and summarizes fifteen others from the literature, discussing the technic of operative intervention and the after-treatment.

Berliner klinische Wochenschrift.

December 23, XLIV, No. 51, pp. 1631-1662.

76 Foreign Body Two Years in Left Bronchus. Extraction by Direct Route. Recovery. (Fremdkörper im linken Bronchus.) H. von Schrötter.
77 Serum Diagnosis of Syphilis. A. Wassermann. Id. G. Meyer.
78 The Quartz Lamp in Treatment of Cutaneous Affections. (Quarzlampe.) R. Ledermann.
79 *Neuralgia of the Rectum. (Mastdarmneuralgie.) A. Albu.
80 Exophthalmic Goiter and Sexual Life of the Female. (Die Basedowsche Krankheit und das Geschlechtsleben des Weibes.) N. Kron. Commenced in No. 50.
81 *Cure of Nervous Eructation. (Fall von nervösem Aufstossen.) S. Saito.

December 30, No. 52, pp. 1663-1686.

82 Oxidation of Sugar. (Oxydationswege des Zuckers.) G Rosenfeld.
83 Micrococcus Influenza, with Infectious Allorhythmia of the Heart and Reduced Urination During the Day. (Infektiöse Allorhythmie des Herzens und Nykturie.) Bliedert.
84 Dubious Benefit from Serum Treatment of Epidemic Cerebrospinal Meningitis. (Meningokokkenheilserum bei Genickstarrekranken.) W. Schultz.
85 Symptomatology of Brain Tumors. (Hirntumoren.) H. Hirschfeld.
86 *Fetid Otitis of the Outer Ear in Telephone Operator. Hamm.
87 *Suboccipital Inflammations. (Suboccipitale Entzündungen.) L. Grünwald. Commenced in No. 51.

79. **Neuralgia of the Rectum.**—Albu emphasizes the importance of excluding all other causes for the pain in the rectum before attributing it to neuralgia. In one of his cases the pains in the rectal region and perineum radiated to the back, right hip and thigh, and occurred intermittently, gradually growing more severe. The internal organs were intact, but the prostate could be felt a little harder than usual through the rectum, and it gradually enlarged in size as the pains increased, thus differentiating cancer of the prostate. Coccygodynia occurs in women, manifesting itself in pain in the region of the coccyx, increased by walking, micturition and defecation. Another affection which may simulate rectal neuralgia is the anal crisis of tabetics. He describes a typical case in a man of 58, in whom the pains in the anus radiated to the rectum, peritoneum and buttocks, accompanying other symptoms of tabes. Examination of the intestine was impossible except under morphin, as at the slightest touch the anus contracted. This spasm of the sphincter may also be observed on a purely nervous or hysteric basis, as one manifestation of a general spastic obstipation. Only when all the above and reflex neuroses are excluded should the pain in the rectum be classified as neuralgia. In the five cases in his experience all the patients recovered under treatment, as also after a recurrence in one of the cases. He always avoids morphin and opium on principle in these cases, and gives belladonna in large doses, supplemented by hot sitz baths, hot water and steam douches, hot compresses, mud baths or similar measures to relieve the pain. The most durable benefit was obtained by introduction of a thick bougie into the rectum. The beneficial action of the bougie is undoubtedly due to the stretching of the nerves, as in the treatment of neuralgia elsewhere.

81. **Cure of Nervous Eructations.**—Saito's patient for thirty-six years had been accustomed to have an hour or so of loud and annoying eructations every evening. If she did not thus get rid of the "gas" in her stomach she was unable to sleep. He convinced her that the trouble was due to her habit of swallowing air, and cured her by having her wear a gag to keep her mouth open, with a vessel to catch the saliva, during the hours when she previously had had the attacks.

86. **Inflammatory Processes of the Outer Ear in Telephone Operators.**—Hamm's patient was a postmaster who had to

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use the telephone almost constantly, and had received several sharp shocks during thunder storms. He is a robust, otherwise healthy man, whose ears were sound when he assumed these duties, but developed a diffuse external otitis with involvement of the tympanic membrane of the left ear. Mild local measures and avoidance of the telephone soon cured the condition, but a recurrence was observed as soon as the patient resumed the use of the telephone. Hamm has been consulting with a telephone engineer and learns that electric currents certainly pass into the human organism in telephoning, unless special protection is provided against them.

87. **Suboccipital Inflammations.**—Grünwald gives the particulars of five cases which teach that suboccipital inflammation may be due to tuberculosis of the basal and vertebral bones or to other specific or purely inflammatory processes, resulting from some ear trouble, from trauma of the base of the skull, from inflammation of the nasal accessory cavities, or from teeth or may be traceable to syphilis. The suppuration induces a typical syndrome according to the path which it takes and the organs it affects. The most striking symptom is the inability to move the head and the localization of the pain in the trigeminal or occipital domain. In the late stages the infiltration in the back of the neck points to the seat of the inflammation or it may break through into the nasopharynx. The original focus can sometimes be recognized by the sequence of the symptoms, although the primary focus may and usually does long remain latent. The greatest attention should be paid to the signs of perforation, such as sudden subsidence of the pains, of the fever and of the interference with movements, as this spreading of the hitherto circumscribed process to a larger area sometimes differentiates the affection and indicates at the same time the last moment in which immediate intervention may ward off irremediable and possibly fatal consequences. Careful study of the temperature is especially important as a means of keeping oversight over the inflammation and for recognizing the critical moment when the previously circumscribed process begins to spread. Before the development of pronounced suppuration it may be wise to strive to induce the retrogression of the affection by keeping the head absolutely still, possibly also with relief of pressure by traction.

Centralblatt für Chirurgie, Leipsic.

December 28, XXXIV, No. 52, pp. 1505-1536.

88 Mechanism of Retrograde Incarceration of the Intestine. G. Sultan.

Centralblatt für Gynäkologie, Leipsic.

December 28, XXXI, No. 52, pp. 1609-1640.

89 *Leaving Bed Early After Laparotomies. (Zum frühen Aufstehen Köllotomierter.) C. Hartog.
90 *Adrenalin and Osteomalacia. J. C. Reinhardt.
91 Diagnosis of Shoulder Presentation. (Schulterlagen.) J. Kocks.
92 Unusual Case of Criminal Abortion. E. M. Simons.
93 Meteorism After Delivery. (Meteorismus nach Geburten.) Häberlein.
94 Vaginal Cesarean Section in a Tuberculous Woman with Cicatricial Constriction of the Larynx. No Anesthesia. (Vaginaler Kaiserschnitt—Dihrssen.) E. Zarate.
95 Incarceration of a Laminaria Tent in the Uterus. (Einklemmung eines Laminariastiftes im Uterus.) O. Grossmann.
96 Combined Sterilizing Table for Instruments and Instrument Holders. (Kombinierter Instrumentier- und Instrumentensterilisiertisch.) Grube, Hamburg.
97 Needle for Pubiotomy. (Hebosteotomienadel.) W. Nacke.
98 Fanöe's Depressor for the Vagina. N. P. Ernst.

89. **Leaving the Bed Early After Laparotomies.**—Hartog states that at Landau's clinic at Berlin the patients whose wounds are healing by primary intention, with temperature and pulse and passage of flatus indicating that all is progressing well, are asked the second day if they would like to get up. If they reply in the affirmative they are allowed to leave the bed. This early getting up is especially important for diabetics and for patients with myoma. The only exceptions are plastic operations and herniotomies. In the last year about 150 patients have thus been allowed to get up on the second or third day, even after the most serious major operations. Thrombosis was observed only in one instance and it rapidly healed, that is, .75 per cent. The appetite and vital processes in general are much improved by leaving the bed thus early, and the danger of pneumonia is reduced.

90. **Suprarenal Treatment of Osteomalacia.**—Reinhardt reports successful suprarenal treatment in a case of chronic osteomalacia in a vii-para aged 37. The first symptoms were observed two years after her last pregnancy, and had continued a progressive course for four years. During the last year she was bedridden, with the typical bone changes of osteomalacia. Suprarenal treatment according to Bossi's technic was then commenced and continued for two months, with notable and increasing improvement. The patient then left the hospital free from pains and her general health so much improved that she is now able to walk. No by-effects from the injections were observed.

Deutsche medizinische Wochenschrift, Berlin.

December 26, XXXIII, No. 52, pp. 2169-2200.

99 *Serum Diagnosis of Syphilis. W. Fischer and G. Meier.
100 *Goldscheider's Threshold Percussion. (Orthoperkussion.) H. Curschmann.
101 *Diagnosis of Diaphragmatic Pleurisy. Sehrwald.
102 Case of Polycythemia with Urobilin-Jaundice and Enlargement of Spleen. M. Mosse.
103 *Esophagoscopy for Cancer of Esophagus and Cardia. H. Elsner.
104 *Postoperative Tardy Ileus. (Postoperativer Spätileus.) Voigt.
105 *Klapp's Creeping Method of Treating Scoliosis and Its Application by the General Practitioner. (Die Klappsche Skoliosebehandlung—Kriechmethode.) F. Büttner.
106 Adenoid Vegetations and Deafness in School Children. H. Laser.
107 *Rarity of Progressive Paralysis and Tabes Dorsalis Among Uncivilized Colored Races. H. Ziemann.
108 Dressing or Waist to Support the Breast in Mammary Affections. (Verbandtuch bei Erkrankungen der Brustdrüse.) M. Samuel (Posen).
109 *Statistics in Regard to Physicians in Germany in 1907. (Aerzte Deutschlands im Jahre 1907.) F. Prinzing.
110 *Horse or Auto? (Pferd oder Auto?) F. v. Bönninghausen.

99. **Serum Diagnosis of Syphilis.**—Fischer and Meier state that in 114 cases in which the serum diagnosis of syphilis was made in their service the results were invariably negative in the patients known to be free from syphilis while they were positive in 84 per cent. of the cases in which there were evidences of syphilis. They conclude from their experience that the reaction is constitutional; it does not give information as to whether a given affection of an organ is syphilitic or not, but merely shows that the individual is constitutionally affected with syphilis. They regard negative findings as not conclusive, and they were unable to detect any influence on the reaction from specific treatment of the syphilis.

100. **Goldscheider's Threshold Percussion.**—Curschmann reiterates his former endorsement of the Goldscheider technic as instructive and reliable for determining the orthographic outlines of the heart and large vessels. It is not so reliable for percussion of the lungs and abdominal organs as for the heart, except for determination of a pneumothorax. The stroke is the lightest that can be heard, with the least action of the plessimeter. The various criticisms of the method are discussed and its specific importance for examination of the heart is extolled.

101. **Diaphragmatic Pleurisy.**—Sehrwald enumerates the signs of pleurisy involving the pleural covering of the diaphragm. The diaphragm is more or less fixed and the patient breathes by the upper thorax, with rapid, abrupt respiration and tendency to dyspnea, the diaphragm standing higher on the affected side; occasionally there is obstipation and icterus. There is also liable to be severe pain at the insertion of the diaphragm, increased by breathing, coughing, hiccough, etc., with considerable tenderness in the epigastrium and along the twelfth rib, sometimes also between the lower points of insertion of the sternocleido muscle. There may be also a stabbing pain or severe coughing as a mouthful of food passes through the diaphragm on its way down the esophagus. The stomach may also sympathize, and pain, hiccough and vomiting may be observed, as also the respiratory abdominal wall reflex. Friction sounds may be evident over the diaphragm, and the inflammation may spread through the openings in the diaphragm and involve the peritoneum. He reports the details of an instructive case in which the signs of diaphragmatic pleurisy were superposed on those of croupous pneumonia, with involvement later of the peritoneum. The pains in deglutition were so severe that the patient had to be fed by the rectum, until comparatively normal conditions promptly followed defervescence on the eleventh day.

103. **Esophagoscopy for Cancer.**—Elsner's experience indicates that cancer of the esophagus can usually be readily diagnosed by the history and by sounding, but that it is much more difficult to diagnose cancer of the cardia in an early stage. Esophagoscopy is, therefore, scarcely ever required for cancer of the esophagus, but it is extremely valuable in cancer of the cardia.

104. **Tardy Postoperative Ileus.**—Nearly two years had elapsed after the operation in the case described before the symptoms of ileus developed. The symptoms were comparatively mild, and the peritonitis seemed to be restricted to a small patch, but operation revealed that the obstruction was due to postoperative adhesions and that a long strip of intestine was gangrenous.

105. **Klapp's Creeping Treatment for Scoliosis.**—Bittner reports highly satisfactory results from Klapp's method of having the patients creep about on the floor, with exaggerated movements of the spine. He says that all that is necessary is a large, smooth floor. His office floor is covered with linoleum, and the floor is mopped, the windows opened and no one allowed to enter with shoes before the exercises. The children wear only knee pants and shoes, and thus have the benefits of an air and light bath as well as the exercises. The principles of this method of treating scoliosis were summarized in THE JOURNAL, Feb. 24, 1906, page 625.

107. **Rarity of Progressive Paralysis and Tabes in the Tropics.**—Ziemann resides in western Africa, and he has studied conditions in the West Indies and in Venezuela, where the physicians tell him that fully 50 per cent. of the population are syphilitic. In this experience he has been impressed with the entire absence or rarity of progressive paralysis and tabes among the inhabitants of these regions, negroes, Europeans and Indians. He has also noticed that insanity among the native Africans is almost invariably simple dementia præcox. Arteriosclerosis seems also to be rarer among the uncivilized—he has encountered only two instances of typical coronary sclerosis in negroes. He is inclined to attribute the rarity of progressive paralysis and of tabes to the less strenuous life in the tropics—the less intense struggle for existence.

109. **Physicians in Germany.**—Prinzing gives the number of physicians in Germany for 1907 at 31,416. This is an increase of 276 over the preceding year. There has been a steady increase from 30,071 in 1904 to the present figure. In the cities there are about 10 physicians to each thousand inhabitants; in the towns of from 50,000 to 100,000 there are about 9.1 per thousand, and 7 per thousand in towns of from 10,000 to 50,000, with 2.9 per cent. in the still smaller towns.

110. **Horse or Auto?**—The writer of this article pleads for the horse as the only reliable means of conveyance for all weathers and roads. In most cases, he says, it is not so much a question as to how quickly the doctor can get to the patient but that he gets there sometime, and the horse can be depended on to get him there sooner or later. Comparison of expenses shows that the horse is cheaper in the end than the auto, but the principal advantage of the horse is that it does not breed neurasthenia like the auto, with its nerve-racking noise and jar, and its incessant mental strain.

Deutsche Zeitschrift für Chirurgie, Leipsic.

XCI, Nos 1-2, pp. 1-196. Last indexed, January 11, p. 161.

111 *Drainage and Abdominal Section. K. G. Lennander.
112 Carcinoma and Polarization. P. Ziegler.
113 Diagnosis of Position of Appendix in Acute Attack of Appendicitis and Its Importance for the Location of the Incision. (Lage des Wurmfortsatzes.) Krüger.
114 Case of Rupture of Intestine, while Lifting a Weight, in Patient with Bilateral Inguinal Hernia. (Berstungsruptur des Darmes.) M. Grasmann.
115 Typical Luxation Fracture of Intercarpal Joint. V. Schoch.
116 *Healing of Fractures, with Special Regard to the Importance of Effusion of Blood for Formation of Callus. (Frakturheilung.) K. Vogel.

111. **Draining and Abdominal Section.**—Lennander describes his technic of draining with coarse cotton wicking and old rubber gloves or dentists' rubber dam. He has found that smooth rubber tissue causes the production of a fibrinous peritonitis when introduced into the abdomen. The adjacent serosa becomes coated with a thick layer of fibrin, and under this layer the epithelium heals and formation of adhesions is prevented. He sutures a patch of rubber dam over an injured part of intestine or abdominal wall when a plastic operation with omentum is not practicable, fitting the rubber dam carefully in its place and fastening it with fine catgut stitches. It is left undisturbed for about a week. Vigorous peristalsis must be maintained while it is in place, preferably by subcutaneous injection of 0.001 physostigmin, this dose being repeated once or twice a day, thirty minutes before rinsing out the intestines. The rubber dam tissue is also the best substance, he says, with which to protect the intestines during the operation; he uses pieces a yard square. He discusses further the best method of incision and the position of the patient after the operation. If the patient is awake he has him sit erect, well supported with cushions and back rest, with the foot of the bed raised for about a foot; a cushion is placed under the thighs to keep the patient from slipping forward. The cushion may be placed under the mattress. This rotates the pelvis forward and upward, relaxes the abdominal musculature, while the lungs and heart can work more freely than in any other position after a laparotomy. In order to prevent numbness in the legs and venous thrombosis, the cushion supporting the pelvis should be taken away five or six times a day and the patient's legs exercised actively and passively, and massaged. It is important that the patient should breathe deep frequently. He should be trained to do this before the operation. The position of the patient should be altered frequently, a little more toward the back or to the side, especially when the intestines are flushed. Almost all patients do well in the sitting posture, but very weak patients may feel dizzy, in which case they should be allowed to recline more.

116. **Healing of Fractures.**—Vogel gives the reasons for his assertion that in treatment of a fracture the aim should be to reduce the formation of callus to the minimum required for healing, and to remove all strain from the reparatory elements. He thinks that extension is the best means of realizing these aims. Nearly the same result is attained by Bier's method of injection of blood at the point of the fracture. It induces aseptic inflammation, lifts up the periosteum and removes strain from the reparatory elements, but it can not be controlled as well as extension to keep the callus formation down to the minimum required. In case extension fails, Bier's technic of injection of blood can be tried, taking care to deposit the blood between the periosteum and the bone, to form a continuous bridge between the stumps. The adjacent tissue is capable of aiding in the formation of callus, so strain must be removed from this also. He describes the particulars of a number of cases to illustrate various points brought out in his article, besides those here mentioned.

Jahrbuch für Kinderheilkunde, Berlin.

December, LXVI, No. 6, pp. 633-764.

117 *Behavior of the Kidneys in Alimentary Intoxication. (Verhalten der Nieren bei der alimentären Intoxikation.) G. Neumann.
118 Defective Development of Cartilage and Thyroid Gland in the Fetus. (Fötale Chondrodystrophie und Thyreodysplasie.) E. Moro.
119 *Pathogenesis of Tetany in Children. F. Pineles.
120 Banti's Disease in Children. L. Finkelstein.

117. **The Kidneys in Alimentary Intoxication.**—Neumann analyzes a number of cases, stating that albumin and tube casts in the urine were found constantly in his cases, but that they testified merely to irritation of the kidneys. No pathologic anatomic changes in the organs could be detected. The signs of transient irritation paralleled the general symptoms of the alimentary intoxication and yielded with them to dietetic measures. Both the kidney irritation and the other symptoms were evidently the work of the alimentary toxins. Uremic symptoms are never modified by a change of diet.

119. **Tetany in Children.**—Pineles affirms that evidence is constantly accumulating to sustain the assumption that tetany in children is due to insufficiency of the parathyroids.

Monatsschrift f. Geb. und Gynäkologie, Berlin.

December, XXVI, No. 6, pp. 779-892.

121 *Experimental Research on Constriction Hyperemia Applied to Infected Pubiotomy Wounds. (Stauungsbehandlung der Pubotomiewunden.) Offergeld.

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122 Glycosuria as a Consequence of Abdominal Tumors. W. Evelt.
123 *Primary and Secondary Dysmenorrhea. M. Töbler.
124 *Painful Spasmodic Contraction of the Pelvic Organs. (Krampfzustand der Beckenorgane.) A. Mueller.
125 Vaginal Operation for Diseased Adnexa. A. Hengge.

121. **Constriction Hyperemia Applied to Infected Pubiotomy Wounds.**—Offergeld has already reported the details of his experimental research on pubiotomy. He here relates the further history of the animals; in many of them the wound became infected. His experience shows that injury of the vagina during the operation is the most menacing of all complications that can occur, as then the germs from the vagina infect the wound at once and sepsis follows. Serum treatment did not give encouraging results, but prompt application of the Bier constriction technic aborted the infection, localized the morbid process and allowed it to heal even when symptoms of septic osteomyelitis had developed. After pyemia has appeared the constriction offers little prospects of success. He applied the constricting band to compress the inferior vena cava where it lies close to the spine, just below the umbilicus. Constriction at this point induces passive hyperemia in the hind legs and pelvis. The constriction was applied for about twenty-two hours a day, and kept up until temperature and pulse were normal and the animals were lively and ready to eat. The malodorous discharge and local tenderness in the pubis had subsided before the constriction was suspended. When the aim was to enlarge the pelvis, by promoting deposits of lime salts, then the constricting band was applied only for about seven hours a day, and this procedure was kept up for a week or so.

123. **Primary and Secondary Dysmenorrhea.**—Töbler has encountered 234 cases of primary and 466 of secondary dysmenorrhea, and thinks it is important to differentiate these forms. In most cases of dysmenorrhea in girls the pain is the result of circulatory disturbances in the pelvis, a passive hyperemia resulting from an unhygienic manner of living and dressing, with active hyperemia at the time of the menses, especially when combined with defective development of the elastic elements of the uterus, causing stretching and compression of the nerves, with pain as the result. As a large proportion of the vessels and nerves involved are in the subperitoneal connective tissue, this is probably the seat of the pains. This assumption is confirmed by study of the pains and by the results of therapeutic measures. In dysmenorrhea secondary to marriage and childbirth, the trouble is generally traceable to some pathologic process, but even in these cases circulatory disturbances are a contributing factor. Measures to influence the general circulation and the circulation in the small pelvis are liable to improve and even cure in many cases which have failed to respond to nerve tonics. During the attack the application of small, hot, wet compresses or hot-water bottles to the lower abdomen often relieve, and the effect is better the earlier the heat is applied. Part of the blood with which the internal organs are gorged is thus drawn to the periphery, and the pelvic organs are relieved. Sometimes merely a change of style of corsets, or treatment of constipation will cure the trouble. Other patients may require repose and others do better under exercise to stimulate the circulation through the parts. General treatment of chlorosis is also useful in some cases.

124. **Cramp-Like Contraction of the Pelvic Organs.**—Mueller reports three cases recently observed in which there seemed to be a spasmodic, painful contraction of the intestine, urethra and vagina or of the whole of the pelvic musculature, lasting for several days. The symptoms indicated that the uterus participated in the syndrome. In each case there was a history of some inflammatory process in the rectum or genitals or intestine requiring surgical treatment, and the spasmodic painful contraction of the pelvic organs followed almost at once. Morphin is unable to control the pain, and neither flatus nor urine passes for several days, the contraction of the urethra rendering catheterization difficult. The general condition was surprisingly good in comparison with the severity of the symptoms. The attack comes on suddenly with its fullest intensity, suggesting perforation, but the low pulse and temperature exclude peritonitis. In the first case an exploratory laparotomy failed to reveal any cause for the spasm, and in the other cases Mueller sought merely to tranquilize the patient, refraining from active measures as much as possible, and the spasm then spontaneously subsided. The trouble is undoubtedly a reflex cramp. Many cases of atony of the intestine and lack of spontaneous urination after childbirths and operations evidently belong in this category.

Münchener medizinische Wochenschrift.

December 24, LIV, No. 52, pp. 2581-2636.

126 *Gastric Digestion. (Magenverdauung.) O. Cohnheim.
127 *Cutaneous and Ocular Reaction to Tuberculin. (Haut- und Ophthalmoreaktion auf Tuberkulin.) C. Mainini. Id. Wiens and Günther. Id. C. Klieneberger.
128 Antitoxic Function and Albumin. H. Much.
129 Toxins in the Blood of Diphtheria Patients. (Nachweis des Toxins im Blute des Diphtheriekranken.) A. Uffenheimer.
130 *Albuminuria and Elimination of Salicylic Acid. (Albuminurie und Ausscheidungsverhältnisse der Salizylsäure.) R. Ehrmann.
131 Sahli's Desmoid Reaction. Schmidt's Test Diet and Siphonage. Tottmann.
132 Diagnosis of Epidural Hematomas. E. Lindner.
133 *Hemorrhage from Vaginal Varices During Pregnancy. (Scheidenvarixblutung.) Grünebaum.
134 *The Sanitary Service in the Construction of a Railroad in German East Africa. (Gesundheitsdienst beim Bahnbau Daressalam-Morogoro.) H. Krauss.

December 31, LIV, No. 53, pp. 2637-2652.

135 Antiferment Reaction of the Blood and Its Connection with the Opsonic Power in Acute Infectious Diseases. Wiens.
136 *Deprivation of Salt in Pregnancy Dropsy. (Kochsalzentziehung bei Schwangerschaftshydrops.) H. Cramer.
137 Pruritus in Tabes. Günzburger.
138 Improved Manikin for Obstetric Teaching. (Neuerungen auf dem Gebiete der Hilfsmittel für den geburtshilflichen Unterricht am Phantom.) H. Gloeckner.
139 Improved Tampon for Nose and Nasopharynx. (Zugstreifentampon.) G. Lennhoff.

126. **Gastric Digestion.**—Cohnheim relates a number of interesting results from research on dogs with a fistula into the upper part of the duodenum. This technic allows particularly instructive conditions for pharmacologic studies and for study of stomach disturbances. One of his dogs presented symptoms similar to those of achylia in man.

127. **Cutaneous and Ocular Reaction to Tuberculin.**—Mainini applied the cutaneous test in 208 cases and the ocular test in 100 cases, and was impressed with the constancy of the local reaction in the patients with certain tuberculosis, excepting those in very advanced stages. He does not, however, accept the dictum that the reaction is absolutely specific. The cutaneous reaction was positive about six times more frequently among the patients merely suspected of tuberculosis than the ocular reaction. Assuming that the reaction is a specific one, these findings seem to indicate that the ocular reaction corresponds to an active tuberculous lesion while the cutaneous reaction is an index of latent foci as well. Wiens and Günther warn decidedly against the ocular reaction as by no means such a simple matter as heretofore assumed. It is liable to aggravate a mild conjunctivitis and cause serious trouble, as they illustrate by several instances from their experience. One patient was a child of 3 with a spinal tumor. The instillation was followed by a chronic catarrhal conjunctivitis, still evident months after the injection. In another patient there was swelling and suppuration of the conjunctiva, with slight irritation for some time and finally phlyctena. The conditions are still far from normal, more than three months since the instillation. In a man of 24 the suppurative secretion soon ceased, but it was followed by hemorrhage into the conjunctiva and inflammation for more than a week. Since these experiences the 1 per cent. solution of tuberculin was reduced to half strength and applied in 38 cases with negative reaction in all but one. In this case a pre-existing mild conjunctivitis became much aggravated, with formation of pseudomembranes, hemorrhages, keratitis and severe subjective disturbances. By the end of the week the symptoms gradually subsided until conditions were normal by the end of the second week. Their experience confirms the necessity for refraining from this test in case of pre-existing conjunctivitis. It also shows that when a reaction occurs, superposed on a conjunctivitis, the reaction still presents the same typical course. Klieneberger relates his experiences with 61 cases and declares that a reaction to a second instillation in the same eye is merely an evidence of hypersensitiveness.

130. **Elimination of Salicylic Acid.**—Ehrmann's latest research has confirmed his previously announced conclusions in regard to the transient nature of the nephritis sometimes observed after administration of the salicylates. He refers to the fact that nephritis as an after-affection of acute articular rheumatism is practically unknown. The real danger from large doses of salicylates, if there is any liability to danger at all, lies in the medulla oblongata and the brain, not in the kidneys. Slowing of the heart beat and respiration, delirium and collapse, and dyspneic coma have been observed in salicylic intoxication. Ehrmann's discovery that the elimination of salicylic acid is immeasurably hastened by ingestion of sodium bicarbonate, suggests the importance of administering large doses of sodium bicarbonate in case of symptoms suggesting a tendency to salicylic poisoning. Administration of large amounts of sodium bicarbonate has also a marked effect on the elimination of beta-oxybutyric acid. He adds that it might be well to keep in mind the patients who presented albuminuria under the salicylates, in view of the possible development of nephritis in after years. It is possible that the kidneys in such patients are inclined to be functionally incompetent and predisposed to disease. If so, then we have in the reaction to the salicylates a valuable index pointing to impending trouble which may be warded off by appropriate measures.

133. **Vaginal Varices in Pregnancy.**—Grünebaum calls attention to the itching which seems to be a frequent accompaniment of varicose enlargement of the veins in the vulva and vagina. When this pruritus occurs the patients should be warned of the danger of varices and of rupture of a varix, and be instructed how to arrest hemorrhage. In one of his cases the patient bled to death from a ruptured vaginal varix before medical aid could be obtained. She had suffered from pruritus of the vagina for two or three months, but had not informed her physician.

134. **Sanitary Measures in Construction of Tropical Railroad.**—Among the measures introduced was the "quinin calendar," an ordinary large calendar hung on the wall. Every eighth, ninth and tenth day were printed in red letters, and each day thus distinguished bore the legend to take 15 grains of quinin fractioned in five doses, with an acid drink afterward to help dissolve the capsules. Each calendar also bore the following instructions: 1. Never drink unboiled water (dysentery). 2. Never allow constipation to last over one day. 3. Never sleep in the negro huts or shelters (relapsing fever). 4. In case of blackwater fever (bloody urine), drink lots of water, light hot tea, and, to control vomiting, take six drops of tincture of iodin in a glass of water, sipping it. No quinin! Send for the doctor. 5. In case of bloody diarrhea eat nothing but gruel and milk. Stay in bed and keep the abdomen warm. Send for the doctor. 6. Protect the feet evenings against mosquito bites. No low shoes! 7. Never sit down in sweaty clothes in a draft. 8. Sleep only under a tight mosquito net.

136. **Deprivation of Salt in Treatment of Dropsy of Pregnancy.**—Cramer has achieved brilliant results during the last two years in conquering the tendency to hydrops in pregnant women simply by ordering them to refrain from milk and meat, as those contain naturally much salt, and to avoid the addition of salt to any article of food. The ingestion of fluids is not restricted. Otherwise the women make no change in their habits. In less than three days the amount of urine voided is much increased, the general health improves, and all disagreeable sensations from the tension in the tissues vanish in a few days. He orders this diet kept up to the end of the pregnancy, and has never noted anything tending to show an injurious influence on the fetus from the deprivation of salt. On the contrary, he witnessed in one case the subsidence of a hydramnion and consequent normal delivery at term. It is remarkable, he says, how quickly any return to salt in the diet is followed by recurrence of the dropsical condition. Dropsy of pregnancy is liable to entail a predisposition to eclampsia and albuminuria, he says, and hence it should be kept under control. No measure to accomplish this is so convenient and free from danger for the heart as simple deprivation of salt in the diet.

Therapie der Gegenwart, Berlin.

December, XLVIII, No. 12, pp. 529-576.

140 *Opium in Treatment of Appendicitis. (Opiumbehandlung bei Perityphlitis.) L. Boas.
141 *Medicine and Appetite. (Arznei und Appetit.) W. Sternberg.
142 Treatment and Prognosis of Epidemic Cerebrospinal Meningitis, and Symptomatology of Acquired Chronic Hydrocephalus. G. Koch.
143 Operative Treatment of Tuberculous Affections of the Mucosa of the Upper Air Passages. E. Holländer.
144 Special Schools for Children with Curvature of the Spine. (Skoliosen-Schulen.) G. Müller.
145 Corrosion of Lower Intestine from Druggist's Mistake in Dispensing Chlorinated Lime Instead of Calcium Chlorid. (Chlorkalkverätzung des untersten Darmes.) O. Schloss.

140. **Opium in Appendicitis.**—Boas thinks that the only virtue of opium in appendicitis is to relieve the pain, and he strives to accomplish this with the smallest possible doses, trying to get along without it at all as much as he can. Stricker reported in 1906 that the mortality in the army was only 1 or 1.2 per cent. in the cases in which no opium was given, while it was over 4 per cent. in the cases in which opium or purgatives had been administered. Boas states that he has not lost a patient from appendicitis during the last five years, and that none of his patients was operated on during the acute attack, and none succumbed when operated on later. He aims to tide the patient past the acute attack, under incessant medical supervision. Absence of opium allows the cases that demand immediate intervention to be differentiated from the mild cases.

141. **Medicines and Appetite.**—Sternberg insists that the way the food is prepared and served is more important than drugging in case of loss of appetite. He preaches that the kitchen should be developed further as an indispensable requisite for the progress of modern therapeutics. Much drug taking impairs the appetite and sometimes appetite is restored merely by suspending all medication.

Virchow's Archiv, Berlin.

CXC, Supplementary Tuberculosis Number, pp. 1-544.

146 Protection of Guinea-pigs Against Tuberculosis with Friedmann's Turtle Bacillus. (Können Meerschweinchen durch den Schildkrötenbacillus gegen Tuberkulose geschützt werden?) J. Orth and L. Rabinowitsch.
147 History of Attempts to Immunize Against Tuberculosis with Tubercle Bacilli of Cold-blooded Animals and Acid-proof Bacilli Resembling Tubercle Bacilli. Id.
148 Infection of Man with Bovine Tuberculosis. (Infektion des Menschen mit Rindertuberkulose.) H. Beitzke.
149 Experimental and Pathologic Anatomic Research on Ocular Tuberculosis. (Augentuberkulose.) F. Duels.
150 Immunization in Tuberculosis. E. Klebs.
151 Spontaneous Tuberculosis in Monkeys. (Affentuberkulose.) L. Rabinowitsch.
152 Tuberculosis in Birds and Its Relation to Tuberculosis in Mammals. (Tuberkulose der Vögel und ihre Beziehungen zur Säugetiertuberkulose.) Id. and M. Koch.

Books Received

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

A TEXT-BOOK OF BOTANY AND PHARMACOGNOSY. Intended for the use of students of pharmacy, as a reference book for pharmacists, and as a hand-book for food and drug analysts. By Henry Kraemer, Ph.B., Ph.D., Professor of Botany and Pharmacognosy, and Director of the Microscopical Laboratory, in the Philadelphia College of Pharmacy; Member of the Committee of Revision of the Pharmacopœia of the United States of America. Illustrated, with 321 plates, comprising over 1,500 figures. Second edition. Price, $5.00. Philadelphia: J. B. Lippincott Company, 1907.

NERVOUS AND MENTAL DISEASES. Vol. X of the Practical Medicine Series. Under General Editorial Charge of Gustavus P. Head, M.D., Professor of Laryngology and Rhinology, Chicago Postgraduate Medical School. Edited by Hugh T. Patrick, M.D., Professor of Neurology in the Chicago Policlinic, and Charles L. Mix, A.M., M.D., Professor of Physical Diagnosis in the Northwestern University Medical School. Cloth. Pp. 240. Price $1.25. Chicago: The Year-Book Publishers, 1907.

THE PROLONGATION OF LIFE. By Elie Metchnikoff, subdirector of the Pasteur Institute, Paris. English Translation Edited by P. Chalmers Mitchell, M.A., D.Sc., Oxon., Hon. LL.D., F.R.S., Secretary of the Zoological Society of London. Cloth. Pp. 343. Price, $2.50. New York: G. P. Putnam's Sons, 1908.

MOVABLE KIDNEY. By David Newman, M.D., F.F.P.S.G., Surgeon to the Glasgow Royal Infirmary. Cloth. Pp. 233. Price $1.75. New York: Longmans, Green & Co., 1907.

PROCEEDINGS OF THE PATHOLOGICAL SOCIETY OF PHILADELPHIA. Paper. Pp. 235. Published by the Society, 1907.

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